173.2
In84De

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
JUL 12 1963
CURRENT SERIAL RECORDS

DEVELOPMENT RESEARCH DIGEST

Volume 1 Number 4 April 1963

Prepared by the
NATIONAL PLANNING ASSOCIATION
WASHINGTON, D.C.
U.S.A.

Inclusion of material in this publication does not imply that the opinions and conclusions expressed therein are necessarily those of the United States Government.

The DEVELOPMENT RESEARCH DIGEST is prepared for the Agency for International Development by the National Planning Association, a private non-profit organization in Washington, D. C.

The material in this DIGEST may be freely reproduced in underdeveloped countries, either in the original English or in translation into local languages, or may be adapted, provided credit is given to the author and original source, and further provided that the sense of the original is not distorted in adaptations. Where material carries a copyright notice, this notice must also be included in the credit citation.

Inclusion of material in the DEVELOPMENT RESEARCH DIGEST does not imply that the opinions and conclusions expressed therein are necessarily those of the United States Government or of the National Planning Association.

Inquiries or suggestions concerning any of these materials, or the original articles, should be directed to the U.S. Operations Mission (or to the AID Representative) in each country. Where AID has no representative, send inquiries to:

Research and Evaluation Staff
Office of Human Resources and Social Development
Agency for International Development
Department of State
Washington 25, D. C.

D E V E L O P M E N T R E S E A R C H D I G E S T

Volume I - Number 4 April 1963

A journal of
selected excerpts, summaries and
reprints of current materials on
economic and social development

Prepared by the NATIONAL PLANNING ASSOCIATION
Frances M. Geiger, DIGEST Editor

for

AGENCY FOR INTERNATIONAL DEVELOPMENT
DEPARTMENT OF STATE
Washington 25, D. C.

DEVELOPMENT RESEARCH DIGEST

Volume I - Number 4 April 1963

CONTENTS

THE UNITED NATIONS CONFERENCE ON
THE APPLICATION OF SCIENCE AND TECHNOLOGY
FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

SOME REFLECTIONS ON THE SCIENCE CONFERENCE 1
Edward C. Fei

SCIENCE, TECHNOLOGY, AND DEVELOPMENT: 6
A SERIES OF BOOKS CONTAINING THE UNITED STATES
PAPERS PREPARED FOR THE SCIENCE CONFERENCE

PROCEEDINGS OF THE CONFERENCE 8

DEVELOPMENT PLANNING

ORGANIZATIONAL REQUIREMENTS 9
FOR STABILITY AND GROWTH
Luis Escobar

SOME THOUGHTS ON PERSPECTIVE PLANNING 19
Pitambar Pant

PUBLIC COOPERATION IN ACHIEVING DEVELOPMENT GOALS 27

India -- Stimulating Public Cooperation
J. F. Bulsara 28

Nepal -- Explaining the Delay in Starting the Second Development Plan
Rishikesh Shah 31

Jamaica -- Explaining the Task Ahead to the People 32

PUBLIC ADMINISTRATION AND THE THEORY OF ECONOMIC DEVELOPMENT
K. William Kapp 34

RELATING SHORT-TERM DEVELOPMENT PLANNING TO THE GOVERNMENT BUDGET 37

DEVELOPMENT STRATEGY AND FISCAL AND MONETARY POLICY

CONFERENCE ON INFLATION AND GROWTH IN LATIN AMERICA: SUMMARY OF SESSIONS
Richard Ruggles 47

OBSERVATIONS ON THE RELATIONSHIP BETWEEN DEVELOPMENT AND INFLATION
W. Arthur Lewis 60

SUGGESTIONS FOR THE DEVELOPMENT OF A CAPITAL MARKET IN TURKEY
Ibrahim Öngüt 72

INDUSTRIALIZATION

ECONOMIC REQUIREMENTS OF MODERN INDUSTRIALIZATION
Simon Kuznets 79

THE PHYSICAL PLANNING OF INDUSTRIAL ESTATES 90

STANDARDS AND STANDARDIZATION AS PREREQUISITES FOR DEVELOPMENT

INTRODUCTION 93

THE ROLE OF SPECIFICATIONS AND STANDARDS IN THE INDUSTRIALISATION OF LESS DEVELOPED COUNTRIES 94

THE USE OF STANDARDS IN IMPROVING ENGINEERING EFFICIENCY IN DEVELOPING COUNTRIES
G. Weston 104

THE INDIAN STANDARDS INSTITUTION AND SOME OF ITS WORK
Lal C. Verman 110

INTRODUCTION OF STANDARDS, NORMS AND TERMINOLOGY IN THE UNITED ARAB REPUBLIC
M. M. Salama 115

THE JOURNAL OF ECONOMIC ABSTRACTS 118

THE UNITED NATIONS CONFERENCE ON THE APPLICATION OF SCIENCE AND TECHNOLOGY FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

SOME REFLECTIONS ON THE SCIENCE CONFERENCE

Edward C. Fei

This is an original article.

The United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas, held in Geneva between February 4 and 20, 1963, was attended by 1,657 delegates from 80 nations. Over 1,800 technical papers were presented or discussed in 3 plenary, 12 general and 81 specialized sessions, arranged in 12 categories -- natural resources; agriculture; health and nutrition; communications; human resources; industrial development; transport; social problems of development and urbanization; organization, planning, and programming for economic development; organization and planning of scientific and technological policies; international cooperation and problems of transfer and adaptation; and training of scientific and technical personnel.

What has been gained from such a Conference? What are the next steps? It is perhaps too early to give definite answers. Much work is still going on. The UN is engaged in the mammoth task of pulling together papers,

Edward C. Fei is Acting Deputy Administrator for Research, Office of Human Resources, Agency for International Development. He is also Executive Director of the U.S. Science Conference Staff, which organized the U.S. participation in the UN Science Conference. Formerly, he was for many years Professor of Economics and Economic Consultant both in the United States and abroad.

comments, and discussions in a series of summary reports. Nonetheless, while the Conference is still fresh in our minds, some thoughts and comments may be useful.

The Communications Gap

One strong impression left by the Conference is the obvious lack of communications not only between scientists and those who are charged with national development, but also among scientists of the different disciplines. It is perhaps natural that plant pathologists the world over share a common interest and speak a "common" language, as do development economists and public health specialists. Indeed, one of the greatest dangers facing the Conference was the tendency of such separate professional groups to disappear into their own little worlds. Yet, the Conference, as a unity, was meant to emphasize the interrelatedness of the development process. What did the educator have to learn from the economist, or the transport engineer from the sociologist? What can the social sciences contribute to the earth sciences, the life sciences, or the engineering sciences, and vice versa, in terms of dealing with the complex problems of national development, economic growth, or social change? With few exceptions, the various disciplines have not been able to converse with each other.

In a different dimension, there seemed to be a lack of communication between the scientists and the administrators of development programs, especially those in the government. It was commonplace to hear a scientist say "we," meaning his fellow scientists from other countries, and "they," meaning his own government. Moreover, the important role of scientists in national policy has yet to be understood and accepted in many newly developing nations. How can scientists the world over participate more actively in national affairs, in development planning, programming, administration, and policy making? Conversely, how can the scientist broaden his understanding of the realities of the social and political environment in order to fulfill his responsibilities?

The Know-How Gap

A second impression that grew as the Conference proceeded was the gap in know-how between the industrially advanced and developed countries and many of the developing countries. At first glance, this conclusion seems to belabor the obvious. But, the difference seems less one of degree, as might be expected, than of kind. It is not so much the great difference, for example, between the hoe and the tractor combine, that characterizes the gap, but the entire environment out of which tangible differences arise -- the social relationships, the economic institutions, the technological base, which support and maintain the disparities in technology and practice.

What was perhaps less obvious and expected was the lack of know-how in dealing with this problem. What should be done, and how to go about doing it? We simply are not sure. The fruits of science and technology must be, and have been, transferred. It is perhaps no accident that those which can be adopted and transferred intact, and need no modification, are the ones which are transferred easily and successfully. But the need, and the lack of success, is precisely in those areas where innovation and adaptation are required. How does one bring about a modern health service in a country? The question goes well beyond the need to train more doctors, nurses, administrators, etc., or how to train more, faster. Is the Western medical and health system the right one for a developing nation? Or does each country have its own needs and capabilities?

Similar questions could be asked of the transportation system, and the education system. We are thus approaching the very heart of the development process -- the problems of transfer and adaptation, of manpower and training, of technical assistance and technological policy.

Human Resources and Technical Assistance

From the opening message of UN Secretary General U Thant to the speeches at the closing session, a constantly reiterated theme was the importance of human resources. It was both the means for development and the goal of development. Coming after a decade of emphasis on the capital requirements for economic development, the recognition of the central importance of developing human resources is well taken. But the path between valid and accepted generalizations and specific ways of integrating human resource development into the developmental process remains largely uncharted. How does science and technology relate to human resources? The very difficulty of answering this question may simply indicate that there is no magic formula for accelerating change in people. Education and training must still provide the ultimate answers but science and technology may now be better able to assist through an integrated science policy, manpower planning, new communications media, new approaches to curriculum development, teacher training, programmed learning, and, above all, research on the problems of adaptation and motivation which underlie individual and social change and successful transfer.

In this light, the use and misuse of technical assistance, and the various responsibilities of donor and recipient countries were thoroughly aired in the course of Conference deliberations. Central to the most effective use of technical assistance is the ability to program it in concert with programming of capital development and as an integral component of national and sectoral development planning. Two points which were highlighted were coordination and cooperation. First, much greater coordination is needed between the donor countries to increase

timely responsiveness to developing country needs. Interestingly enough, many of the delegates felt that planning might best be multilateral, but that implementation could better be bilateral. Second, the potentialities of cooperation among the developing countries in utilizing technical assistance and avoiding duplication of facilities for training remain largely unexplored.

A very interesting question was posed by delegates from the developing countries -- in such unrelated Conference sessions as those on industrial development, urbanization, community development, agricultural and rural development -- which bears upon the development of human resources: How can groups of the population be motivated, and how can leadership at the local level be fostered? The critical need to develop qualities of leadership both in local self-help situations and in the recruitment, selection, and training of cadres is being increasingly recognized and demands an answer that only pertinent research can supply.

UN Conference -- Now and the Future

Even before the Conference ended, some definite returns were realized. These were of benefit no less to the advanced nations than to the developing nations.

The need for such a Conference was long overdue. The confrontation -- not simply between the developing and developed countries, but more importantly between scientists and governments -- on the problems of how, and to what extent, science and technology relate to development, was most timely. All of us have perhaps spoken too glibly about the wonders of science and technology and their benefits to mankind. It was necessary to face and highlight this issue, to exchange views, to ask questions, if not always to find answers. As a result, the impetus to study and understand this problem, to apply drastically increased efforts at finding solutions, has been given dramatic momentum.

One benefit of the Conference is already apparent. The administrators of development programs and the scientists from the developing countries have had an opportunity to meet those interested and involved in their problems not only from the developed nations but also from countries like, or only a little more advanced than, their own. They have established new contacts to which they may turn for advice and assistance; and they have had a chance to discuss their problems, to explore possibilities for future research and action. To the delegates from the developed countries, the Conference has been a rare opportunity to learn about and understand the specific problems faced by the developing countries. The broad scientific communities of the developed nations -- the universities, foundations, private and government research groups -- will be better able to direct and focus research and other activities upon the issues and problems important to the developing countries.

One obvious result of the Conference will be the necessity for action by national and international agencies and private groups to cope with the demand from the developing countries for more scientific information, to develop more effective means of bringing science and technology to bear upon developmental problems.

What are the implications of this Conference for AID? Because of our direct role in assisting most of these countries in their national development, the momentum generated by this Conference will be felt by the AID field missions. Delegates returning to their own countries will wish to follow up: there will be new ideas generated, new questions raised, new plans made. For advice and assistance, they may well turn to AID, and their first point of contact is usually our people overseas. Out of our own successes and failures, what can we learn and transfer to the people in our missions which will make them more effective? How can we help the less developed countries assess their needs and priorities in developing a sound science policy? How can we assist them to tap more effectively their own small but growing scientific communities so that they can play a more active role in nation building? How can we assist in bringing scientists, research institutions, and universities in the free world into active, self-sustaining relationships with their counterparts in the developing countries?

One of the most important and immediate tasks is to improve the process of making scientific information available to academic and scientific groups in the developing countries. Textbooks, periodicals and literature in all fields are desperately needed. Side by side with this activity must be the gradual improvement of the science curriculum, especially in secondary education, and of science teaching and teacher training. At the same time, a great deal of what is already known and transferable in modern science and technology has not been systematically applied in education, business, industry and government. Central to our efforts must be the improvement in programming of human resource development within the framework of national development planning, and the programming of technical assistance as an integral component of this process. The almost unlimited needs for training of scientific manpower can only be met by much more effective planning, coordination, programming and implementation.

Finally, the central role of research in accelerating development must be given greater recognition. Where resources are drastically scarce, we cannot afford not to do research -- to give us better answers as to what to do and how best to do it. What science and technology have to offer is above all an approach to problems. Great gaps exist in our knowledge of the many aspects of political, social, economic, and technological development. The more effective use of human and natural resources, and a more rapid rate of development, will ultimately depend upon our ability to harness the natural, social and applied sciences to our cause. For this, a spirit of inquiry and experimentation is indispensable.

SCIENCE, TECHNOLOGY, AND DEVELOPMENT:
A SERIES OF BOOKS CONTAINING
THE UNITED STATES PAPERS PREPARED
FOR THE SCIENCE CONFERENCE

The preparation for the U.S. participation in the Conference was the responsibility of the Research and Evaluation Staff of the U.S. Agency for International Development. Starting well over a year before the Conference, and working through a series of expert scientific advisory panels, the Science Conference Staff solicited some 300 papers from the U.S. scientific community -- from universities, research institutions, foundations, private business, and government agencies, including AID personnel. Of these, 138 papers were accepted by the United Nations as Conference papers.

These U.S. papers presented at the Conference, supplemented by 60 additional papers believed also to be of continuing value, were published by AID in a set of 12 paperback volumes and were presented at the Conference to all heads of delegations. In addition, as a companion volume to the series, AID published a selected annotated bibliography, which briefly describes some 1,200 recently published U.S. books and articles relevant to the subject matter of the Conference. A limited number of these sets have been made available for distribution through the U.S. AID Missions in developing countries.

Complete sets or individual volumes, including the bibliography, are now available for purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., U.S.A. Orders should include the title of the series and the number and title of each volume desired, as listed on the next page:

Science, Technology, and Development: United States Papers Prepared for the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas

Volume I	Natural Resources: Energy, Water and River Basin Development	378 pp.	$1.25
Volume II	Natural Resources: Minerals and Mining, Mapping and Geodetic Control	355 pp.	$1.00
Volume III	Agriculture	262 pp.	$0.75
Volume IV	Industrial Development	190 pp.	$0.55
Volume V	Transportation	155 pp.	$0.50
Volume VI	Health and Nutrition	196 pp.	$0.60
Volume VII	Social Problems of Development and Urbanization	89 pp.	$0.35
Volume VIII	Organization, Planning, and Programming for Economic Development	144 pp.	$0.45
Volume IX	Scientific and Technological Policy, Planning and Organization	60 pp.	$0.30
Volume X	International Cooperation and Problems of Transfer and Adaptation	63 pp.	$0.30
Volume XI	Human Resources: Training of Scientific and Technical Personnel	204 pp.	$0.60
Volume XII	Communications	162 pp.	$0.50

A Selected List of U.S. Readings on Development by Saul M. Katz and Frank McGowan; Agency for International Development, Washington, D. C. 363 pp. $1.25

PROCEEDINGS OF THE CONFERENCE

For the first time, the United Nations will not follow its usual practice of publishing the full conference proceedings, which in this case would have totaled over 10 million words. Instead, a sizable team of UN writers and editors is at present preparing a manuscript of the Proceedings which it is hoped will synthesize all the information obtained from the Conference in no more than 800,000 words, and which, by eliminating much unnecessary duplication, will also be of far greater use and information.

The Proceedings will be an interpretive digest based on the more than 1,800 papers presented and on the discussions held during the Conference. It will consist of about seven volumes and will be available in separate English, French, Russian, and Spanish editions. It is expected that the price will be around US$10.00 per volume, US$70.00 for the complete set. Publication is tentatively scheduled for September 1963.

Copies of individual papers presented at the Conference may currently be obtained by writing to:

Documents Division
Conferences and General Services
The United Nations
Palais des Nations
Geneva, Switzerland

DEVELOPMENT PLANNING

ORGANIZATIONAL REQUIREMENTS FOR STABILITY AND GROWTH

Luis Escobar

[From a paper presented at the Conference on Inflation and Growth in Latin America, held in Rio de Janeiro, Brazil, in January 1963.]

[An analysis of development problems is doubly interesting if its author is not only a distinguished economist but also his country's Minister responsible for making and executing policies in the areas with which his paper deals. In this paper, Dr. Escobar discusses the way in which the Chilean Government has organized and is carrying on the national development planning function with particular regard to the need to maintain reasonable monetary stability.

A short description of the Conference for which this paper was prepared and a summary of the sessions will be found beginning on page 47.]

This is an abridgment of the paper.

I apologize to my readers for the possible disjointedness of some parts of this paper, a result of the lack of time for greater refinement in its preparation. The heavy tasks that fall upon the Minister of Economy in an underdeveloped country leave only a narrow margin for academic activities.

Luis Escobar is the Minister of Economy, Development and Reconstruction of Chile, and Dean of the Faculty of Economic Sciences of the University of Chile.

Likewise, I apologize for the discrepancies between what I could have stated as a professor of Economics, free from political responsibilities, and the ideas which follow, heavily influenced by experience in the exercise of the Ministry.

In the following discussion I want to stress that the frame of reference corresponds to a "mixed economy" where both the private and public sectors own means of production and are entrepreneurs; where a democratic political system prevails, with political parties, labour unions and other organized "pressure groups" which influence economic and political decisions.

To answer the question which we have posed requires, however, to answer another one first: what is meant by economic development with stability? We will understand it as a process of development at a rate faster than the historical one achieved until now, which should be accompanied simultaneously by: (a) full employment, (b) sectorial and geographical harmony, (c) monetary stability and (d) foreign trade stability. Sectorial and geographical harmony should be interpreted in the sense of avoiding sectorial bottlenecks, shortages of capital or human factors or any geographical region lagging too far behind the rest of the country.

We consider any process of development not complying with the aforementioned requisites, as one inherently containing germs of instability. For example, the appearance of an unemployment situation obliges the withdrawal of financial resources which were reserved, or could have been reserved, for the execution of specific investment programs, whose interruption or postponement could damage the overall rate of development in the country. If one sector of production, say agriculture, lags behind, this also introduces elements of instability in the economic process.

The National Development Plan

We shall interpret a National Plan for Economic Development to mean a coherent and detailed system of economic policy, resulting from an objective examination of the possibilities for accelerating the progress of a country. In the planning, delicate questions come up as to organization; for example, who shall prepare the plans? Who accepts or rejects the National Plan? What ought to be in the Plan? How far shall the intervention of the State go? How shall the Plan be put into practice?

In the process of formulating the Development Plan, the needs for investment in physical and human capital are identified and evaluated, in order to expand the stock of existing capital and to decide its best allocation, with the object of achieving a higher level of income. With

the present income and habitual consumption, the margin of savings appears insufficient. Investments in excess of present savings levels could be financed: by freezing present per capita consumption levels as income rises; by incurring external indebtedness; or by incurring a greater external indebtedness and permitting a small increase in per capita consumption over the long term.

In the formulation of a Plan, a rate of economic growth is chosen that is consistent with the full employment of productive factors, with a determinate standard of living for the population in the short run, and, very important, with a certain distribution of national income.

Obviously, these and other decisions not mentioned, are of profound political significance. Thus, who plans appears to be a substantial problem in organization for development. In my judgment, there are two alternatives: (a) the Plan may be prepared by a specialized technical organization similar to a research institute, or (b) it may be prepared by a technical group including representatives or delegates of the diverse sectors, public and private, that will be in charge of the realization of investment programs.

Alternative (b) has the advantage of relating those who formulate the Plan with those who will have to make it a reality, and therefore appears preferable in theory. Nonetheless, we must abide by the reality of the vast majority of underdeveloped countries. What is this reality? As we see it, one of its principal characteristics is the acute shortage of specialists in the various subjects requiring, let us say, good scientific and technical university training. Thus, it is extremely difficult to arrange for the leading executives, both in the private and in the public sectors, to have time to dedicate to the study and preparation of a Plan as well as to the normal direction of their organizations. These executives have little time to think in terms of national planning. I realize that many of my colleagues from European countries or from North America will consider this assertion highly debatable, but I am certain that my colleagues from Latin American countries will understand easily what I am trying to explain. This is the main reason that in Chile, for example, the decision was for alternative (a).

Alternative (a) signifies that the countries must have an ad hoc group to prepare and formulate the Plan, with the aid of foreign advice. This group must maintain contact with, and know the aspirations of, the diverse sectors, geographic zones, and significant economic organizations of the nation. This group will make top policy decisions and will establish priorities with criteria that will not necessarily coincide with those which the government has or has had.

For this reason, when alternative (a) is applied, once the Plan is formulated a second stage consists in explaining it to the political authorities of the government and to the principal groups of the private

sector, all of which have been heard during the formulation stage. As a result of this second stage, it may be necessary to revise the Plan. Once approved by the government, the Plan becomes the definitive Program, subject to periodic revisions that may be necessary.

From what has been said, it is clear that we consider that it is the Executive Branch of the government that must approve the Plan: the President of the Republic and his ministers. It is these authorities, principally, upon whom lies the responsibility for progress in the community, and for exhausting all available means and efforts to achieve it. This is as natural as is the responsibility of the Legislative Branch, for example, to control the actions of the Executive and to be sure that the latter does not exceed its powers.

An integral responsibility and function of organization for planning is the recognition of the necessity of complementing the Plan with projects and of guaranteeing the existence of resources and institutional mechanisms such that these projects can be initiated promptly and in satisfactory quality and quantity. One must never forget that one of the worst bottlenecks that can appear in the realization of the Plan is the lack of specific projects in the various investment categories contemplated by the Plan. These projects should be prepared in such a way that it will be simple to verify their harmony with the Plan, their internal justification, and their conformity with the requirements of international organizations (to the extent that external financing is required).

Each country will resolve this problem according to its own characteristics; nonetheless, several general observations might be in order. It may be desirable that the projects be prepared in the very organizations that subsequently will be responsible for carrying them out. Briefly, the alternatives are to have projects prepared in such a decentralized fashion or to create a central office in charge of project preparation. We believe that a good solution is to give this responsibility to a National Economic Committee (described in the next section) which can delegate these functions to its technical Secretariat or to the agency preferred in each country for its location and rank in the public administration, and for its technical competence. This Committee should stipulate general norms to all ministries or government departments, according to which each shall prepare the investment projects for which it will be responsible.

Each ministry or department should, therefore, have a Project Office with the necessary staff to prepare not only those investment projects already contemplated in the Plan, but gradually a larger number of projects which will document and back up successive revisions of the Plan. This arrangement will resolve the problem so far as the public sector is concerned. All developing countries that want to have an adequate

number of projects will probably need foreign consultants, for lack of sufficient numbers of specialized personnel. These advisers should be located in the institution corresponding to their specialties.

The private sector also needs attention and help. The central organization in charge of project preparation ought to provide the private sector with technical assistance, both national and international, for the preparation and evaluation of projects. In addition, it ought to make loans to finance their cost. In many cases, it may be advisable for the government itself -- through this central office -- to prepare and evaluate a set of projects which can be turned over to the private sector for implementation. Obviously, various formulas could be discussed for the financing of the cost of such studies.

The National Economic Committee

Starting the Plan demands discipline on the part of the various organizations that will have to submit to its guidelines. This requires coherence among monetary, credit, financial, tax and foreign exchange policy; internal and external coherence, in prices and remunerations; coherence in the investment policies of diverse public and private organizations.

Who, then, must make the decisions to assure the satisfaction of these requisites?

It can be seen that putting the Plan into practice involves matters within the competence of different Ministries and of public corporations which enjoy certain degrees of autonomy. It can also be seen that the discipline required by the Plan makes it necessary that the decision come from the highest level of authority. Thus, the existence of a National Economic Committee is highly desirable. The Committee includes the Ministers of State whose portfolios belong to what we might call the economic sector, as well as the top authorities of those semi-autonomous corporations whose fields of action are also important in the economic sector.

This Committee should meet weekly to discuss current problems whose solutions must be accepted jointly by distinct Ministries or corporations, as well as to report periodically on the progress of the Plan within the field directed by each member of the Committee. The President of this Committee should be that Minister with the greatest responsibility, after the President of the Republic, for the execution of the Plan -- that is, the Minister of Planning.

The Ministry of Planning

It appears to us, then, that just as there is a Ministry of Agriculture, of Public Works, of Finance, etc., there must be a Ministry of Planning whose head, the Minister of Planning, ought to be a public functionary with very few routine administrative obligations, so that he can dedicate himself completely to the discussion of the nature of those changes which periodically must be made in the National Plan, to the control of its functioning, and to decisions as to the measures which must be adopted to resolve unforeseen contingencies during the application of the Plan. The Minister of Planning should preside at meetings of the National Economic Committee. In order that he might have the maximum of stability in his function, although he would be named by the President of the Republic, the President should be able to remove this Minister only if the dismissal is ratified by the Senate.

In our opinion, based on the experience acquired during the exercise of an important public function, this Ministry should have four major divisions:

(a) The Bureau (Dirección) of Budgets

(b) The Bureau of Planning

(c) The Bureau of External Credit

(d) The Bureau of Statistics

The Bureau of Planning should be the body in charge of preparing National Plans, of maintaining necessary contacts with the public and private sectors, and of explaining the Plan to the people.

The Bureau of Budgets would be the organization in charge of assigning public funds and budget resources in accordance with the requirements of the Plan, overseeing the investment of such funds through control of projects and other means. The Bureau of Budgets thus appears as the organization responsible directly for the execution of the Plan.

The Bureau of External Credit would be in charge of the coordination of external financing for the various investment projects in which the public sector participates directly or indirectly, and would maintain appropriate contacts between the government and the international financial institutions.

The Bureau of Statistics, as its name indicates, would be in charge of collecting, centralizing, tabulating, interpreting, and publishing the statistics of national interest, and especially those necessary for the preparation of plans and for the control of their execution.

Regional Planning Committees

A necessary complement to this scheme is the existence of Regional Planning Committees, each corresponding ideally to an economic region in accordance with the economic geography of the country. The corresponding organization may, however, run into grave difficulties whenever the regions distinguished by the political administration of the country (provinces, departments, states, counties, etc.) do not coincide with the regions which are distinguishable economically. It is highly probable that such difficulties occur frequently. As each region has its political authority, and each Regional Planning Committee also would have its own authority, difficult problems of subordination, power, and hierarchy will present themselves in every case in which the Regional Planning Committee includes more than one political region, and/or parts of them. In these cases, we believe that, unless there is willingness to restructure the entire political-administrative organization of the country, it is preferable to recognize the supremacy of the existing administrative structure and to create Committees in accordance with it, leaving the full reform mentioned until later.

The Regional Planning Committees should include the representatives of both the public and the private sectors. Their function should be that of studying specific problems of economic development in their respective regions, suggesting solutions to the Bureau of Planning, collaborating with the latter in checking on the physical and financial progress of the tasks of the public sector in each region, and collaborating with the Bureau of Statistics in its respective task at the regional level. These Committees should also be responsible for communicating to the Minister of Planning those regional problems which, though not contemplated in the National Development Plan, require government action for their solution.

In accordance with the organization so briefly described, it is possible to solve problems of formulating a National Development Plan with counterparts at the regional level, as well as the corresponding regional administrative problems. As we see it, it is in the organization for planning that it is possible to struggle against those factors that impede economic development or that provoke instability in development.

Income Policy in Development Organization

No mention has yet been made of one of the [major aspects of] instability: that of the remuneration of factors of production, which is intimately linked with the distribution of the national income. In our [i.e., Latin American] countries, we are witnesses of a competition within and between the capital and salaried sectors to maximize relative shares of the national income, as well as to raise incomes. They apply pressures via prices and via salaries, respectively.

This struggle introduces monetary, social and political instability to the economic system and, thus, to economic development. To the extent that such competition worsens and dominates the political scene, uncertainties are introduced for investors. This depressing element restricts entrepreneurial initiative and harms the growth rate. We say that it introduces political instability, for it drags down political representatives, congressmen, city councilmen, etc., who fulfill their functions to the extent that they answer to electoral groups that, roughly, are structured in groups of hired workers or in groups of businessmen, whose interests appear to be in conflict. Whenever the congressmen succumb before the pressure of specific groups, either of workers or of businessmen, their attitude may damage the national interest.

This competition introduces monetary instability as well. The firms that cannot resist the pressure of the labor unions yield, but on condition that the government -- fearing unemployment -- concede subsidies to the firms. Improvised and voluminous subsidies make their impact in the fiscal treasury. The fiscal revenues are already obligated for operating costs which are difficult to reduce, for other subsidies whose elimination would provoke disturbances equal to those which it is now sought to avoid, and for investment outlays whose reduction in turn would provoke unemployment.

Congressional approval of laws for new or higher taxes is slow, and their yield, moreover, reaches the treasury much later. Worse yet, the congressmen themselves defend the taxpayer against higher taxes. As a result, within the present political and constitutional organization [in Latin America], and in order to respect their investment programs, our administrations wind up by providing the financing for the subsidy mentioned above. This is done with monetary resources created by the Central Bank through an emission for the exchequer. Thus, finally, the price level rises, whereby real wages are not improved as much as the workers originally desired; employment and public investment are protected; but monetary stability collapses -- or at least is wounded, more or less gravely.

The existence of a national organization to arbitrate these problems appears desirable: a National Tribunal of Conciliation. It should include representatives of the wage earners, of employers, and of the State (Executive Branch), with a majority of the last. The appointments of its members should permit a partial replacement of the Tribunal from time to time. This Tribunal would be the final arbiter in any dispute between workers and employers, in questions of prices, etc., and it would decide questions in accordance with the price remuneration policy of the government. This policy must be explicit in the National Development Plan. Naturally, the decisions of the Tribunal should be binding upon all sides.

The Organization of Planning in Chile

We have established in Chile an organization for planning along the lines described above, which includes as the highest agency a body called COPERE (Comité de Programación Económica y de Reconstrucción, or Committee for Economic Programming and Reconstruction). This Committee includes the Minister of Economy, Development and Reconstruction, who presides at its meetings, as well as the Minister of Finance, of Public Works, of Lands and Colonization, of Agriculture, and of Mines. It also includes the Executive Vice-President and the General Manager of the Development Corporation (CORFO), the Executive Vice-President of the Housing Corporation (CORVI), the President of the Central Bank, the President of the State Bank, and the Director of the Budget.

Thus, the ministers of the "economic sector" and the highest executives of the financial and economic institutions of the State are represented in COPERE. The importance of this organization, as coordinator of economic policy and as the controller of the realization of the Plan, induces the majority of the Cabinet to attend its meetings and the President of the Republic requests the opinion of COPERE in order to take important decisions in economic and financial matters.

The Technical Secretariat of COPERE is the Development Corporation (CORFO), an autonomous institution whose departments include the Bureau of Planning (the organization in charge of formulating the National Plans). To assure compliance with the decisions taken in COPERE -- not forgetting that "he who pays the piper calls the tune" -- a mechanism has been established that relates the delivery of fiscal funds to the various governmental departments to the fulfillment of the investment programs in the National Development Plan: programs which have been approved by the same COPERE.

Legislation in Chile orders that all capital budgets of the public sector be signed by the appropriate Minister and also by the Finance Minister, the Minister of Economy, and the President of the Republic. COPERE has agreed that the Ministers of Finance and Economy and the President will sign only with a previous approval of the Budget Director, who for this purpose has been named Coordinator of the National Development Plan. The Budget Director began in 1962 to establish a system of Program Budgets, which will permit in 1963 a control of each program; he will authorize drawings on fiscal funds in accordance with the progress of each program.

In his role as Coordinator, the Budget Director works with a small team of experts, sectoral coordinators, continually concerned with watching and pushing compliance with the Plan within their respective sectors.

The integration of National and Regional planning has been achieved with the creation of the Provincial Development Committees, as consultive organs of the Central Government. Their fundamental objective is the incorporation of the provinces in the study and analysis of the Development Plans and supervision of the fulfillment of the state investment programs. They constitute an extension to provincial level of the administrative and coordinating action of COPERE. In them, in addition to the technical advisers of CORFO, there are members named by the Government, by the labor unions, and by associations of businessmen. The executive secretary function of the Provincial Committees is also in the hands of CORFO.

The Provincial Committees have also been assigned the task of informing the people about the National Development Plan, explaining to the country, and especially to their province, what the Plan signifies.

SOME THOUGHTS ON PERSPECTIVE PLANNING

Pitambar Pant

[From a paper prepared for the Conference on Problems of Economic Development and the Lessons of Turkish Experience, Istanbul, Turkey, August 1962. To be published in Problems of Capital Formation and Investment in Industry; Istanbul, Economic and Social Studies Conference Board, 1963, approximately 400 pp.]

[The usefulness of short-term operational planning -- usually for three to five years -- is generally recognized in developing countries. But, the need for long-term perspective planning -- ten to fifteen years -- has not always been equally understood. In this paper, Dr. Pitambar Pant -- Chief of the Perspective Planning Division of the Indian Planning Commission -- explains the purposes which perspective planning serves, and stresses particularly how it can be used to foster economic development in countries dedicated to the maintenance and strengthening of democratic institutions.

A short description of the Conference for which this paper was prepared will be found on pages 72-73.]

These are excerpts from the paper.

I am grateful to you for giving me this opportunity of presenting before you some thoughts regarding perspective [i.e., long-term] planning. All I propose to do in my brief talk today is to share with you some considerations relevant to the subject, the importance of which was brought home to us [in India] by our own experience of planning in a democratic context.

Pitambar Pant is Chief, Perspective Planning Division, Planning Commission, Government of India.

Although my experience is limited to India and my thinking greatly influenced by our own problems, there are certain features of perspective planning which appear to me of general validity.

Before I enter into the discussion of perspective planning and its role -- why it is necessary, what repercussions it has on current policies and so forth -- I may begin by reminding you that the need for planning by the less developed countries is no longer controversial. Nothing less than a policy of deliberate development can cope with the urgent and complex problems of these countries. When the pace of change is required to be rapid, and large structural changes in the economy have to be made, reliance on the market mechanism is out of place. The market system is not fully developed in most of these countries and, in any case, it is incapable of reflecting the long-term needs of society. Planning as an instrument for purposeful reconstruction of society is, therefore, accepted widely as a necessity.

The Purposes of Perspective Planning

We are familiar with planning in terms of five-year periods. But, development is a continuous process and planning cannot be effective if this continuity is ignored. If the production assignments of a plan end abruptly at the close of the planning period without providing for a continuity of development in the period immediately following, there is danger of a situation arising in which many enterprises, construction sites, etc., have no definite assignments for the next year. As a result, the tempo of development will be slowed down and great difficulties might be encountered in the normal supply of materials and equipment for the needs of production and construction, as there would be no plan in operation to coordinate them. It is essential to take a long-term view particularly in respect of sectors, such as steel plants, irrigation works, transport and education, which have long gestation periods.

It is not that the principle [of long-term planning] is not recognized. No planner would make the mistake of overlooking the future to such an extent as to concentrate exclusively on schemes maturing within the five-year period. Nevertheless, it is all too common not to include in a plan sufficient work on the early stages of projects which will take a long time to complete. Many of the difficulties in the subsequent period are largely the result of the inadequate realization of this inherent time lag.

Another reason for taking a long view is that there is a limit beyond which the stock of capital and the pool of skilled personnel -- both of which are critical to growth -- cannot be expanded within the relatively short period of five years. Many other difficult problems

requiring extended effort and time for their solution cannot be dealt with in a five-year plan. It is, therefore, necessary to fit the five-year plans into a long-range strategy of economic advance so that they form stages of a perspective plan covering a period of 15 years or so. The period has to be long enough to take into account the time lags in certain long maturing investments and programmes, such as opening of deep coal mines, establishing heavy machine building industry, constructing major irrigation works, expanding the supply of engineers and doctors, and so forth. There is much greater flexibility and possibility of bringing about basic changes because of the scope of enlarging material and human resources in the long-term perspective.

The long-term targets, of course, depend on the natural endowments of a country and its socio-political objectives. Each country has its own problems. The problem of providing full employment may be the most urgent for one country; another may view it as one of assuring a minimum level of living to its people; for some others, the paramount objective might be diversification of the industrial structure. The period of the perspective plan should be long enough to offer a prospect of tackling the basic problems. It should not, however, be too long, because changes in technology are so rapid that the longer the period the less reliable the projections will tend to be. Moreover, if the period is unduly long, the projection would relate to a future so distant as to be of no real interest to anyone. Indeed, far from giving a direction to current effort, such distant goals might tend to reduce the significance of the perspective plan for current decisions. This being so, it seems best to have a perspective plan of 15 years, divided into shorter plans of five years.

A perspective plan must have a clear purpose. It should represent a stage of arrival at a destination -- although, of course, the journey does not end there. The purpose should represent, as far as possible, social goals sought after by the people. In India, in one variant of a perspective plan, we have explored the implications of providing a specified minimum per capita consumption to all people in the course of the next fifteen years, extending 8 years of education to all boys and girls and providing a specified standard of health facilities in rural areas.

The purposes of the perspective plan are to provide a quantitative framework for the possible course of economic development related to social objectives; to work out a set of effective measures for achieving these goals; and to determine the direction of capital investment in various branches of agriculture, industry, transport, etc., and in different regions.

Although the first outline of the perspective plan has to be based on already existing technical data, it is necessary at an early stage

to secure participation in its work of scientists and engineers, research and design organisations, and of large enterprises, so that fullest account is taken of technical knowledge and economic analysis in setting targets and suggesting technological solutions.

A perspective plan, when worked out in sufficient detail, seeks to bring out the interdependence of the various sectors of the economy and is able to identify possible obstacles to the growth of the economy. Analysis of problems of demand and supply arising from the growth of the economy indicate a number of consistent and timely decisions regarding the optimum use of resources, the economies of scale and location, regional distribution of economic activities, suitable structuring of education, and reforming of fiscal and financial institutions. Appropriate action taken at the right time, keeping the needs of future development in mind, improves very greatly the prospects of rapid growth by anticipating the critical bottlenecks. Indeed, the main significance of perspective planning lies in its value for current decisions which, in the absence of such a view, might be wrong and costly.

For example, if transport capacity has not been built so as to be in step with production, wastage of resources due to shortages and idle capacities will become inevitable; and the consequent unanticipated bottlenecks and shortages in certain sectors, by upsetting the sectoral balances, will inevitably slow down the pace of economic growth. One way would be to expand transport capacity excessively so as to take no risk of shortage. This would be very costly, besides having other disadvantages. The advantage of planning for transport in the context of a perspective plan is the possibility it offers of avoiding excessive surplus in transport capacity by linking its development consciously to the anticipated expansion of the productive sectors in different regions in a manner more conducive to the long-term growth and welfare of the community.

The existence of a perspective plan also makes possible the drawing up of a manpower plan by analyzing skills and occupations, both qualitatively and quantitatively in relation to the tasks to be performed. This in turn provides the basis on which the educational system can be planned and closely integrated with the development of the economy. Without such a long-term plan, it would be difficult to adapt the educational system to the needs of the economy. As the development of education is a slow process with a lag of a decade or more between initiation of expansion or reform and output of skills, inevitably bottlenecks would arise, and growth and development would be hampered if timely action is not taken.

In yet another direction, perspective planning has significant contributions to make. It can open new horizons of fruitful cooperation between countries engaged in such planning. By better knowledge

of each other's plans, it can lead to specialization and coordination of production, mutually advantageous trade agreements, and planned coordination of export and import on a long-term basis, resulting in more efficient use of resources.

Perspective Planning and Democratic Development

I shall now dwell at some length on one of the most vital roles a perspective plan can play in a democracy. By bringing out the implications of alternative policies and programmes in quantitative terms, [it enables] discussion of important issues to take place in a rational manner, and greatly improves the chances of an emergence of national consensus on basic issues. Political groups are likely to find far greater agreement than they would normally suspect to exist on so basic an objective as securing a specified minimum income to even the poorest if the problems are posed and dealt with in concrete, quantitative terms. This is a factor of very great importance for the orderly advance of a democratic country at a rapid pace.

It is clear, however, that unless the whole work of preparing the perspective plan is done with a great deal of comprehension and a great deal of insight, and all the issues are brought out in their full implications in a quantitative way, it is very difficult in a democracy to put across a consistent, coherent plan of action to the people which will enlighten their understanding, arouse their interest, evoke their enthusiasm (or reduce their opposition), and enlist their cooperation.

There are many pulls and pressures to which people are exposed from various sides; this tends to create bewilderment and confusion. Fragmented approaches highlight apparent conflicts, and vested interests prefer to respect reality only in so far as it has benefits to offer them. Thus, a distorted picture is built and the atmosphere of popular understanding and participation gets vitiated.

Unless, therefore, the problem has been studied with objectivity, competence and thoroughness beforehand, alternatives presented, and all the implications are clearly brought out, it is difficult to persuade other people to accept summarily on trust the total implications of an interconnected and highly complex development plan for the reconstruction of their social and economic life. It is extremely important that this type of work in a country should be done as part of perspective planning, and should be done very competently and ably, and viewed not merely as an academic and technical exercise but as an urgent social challenge of highest import.

A very widespread discussion must be encouraged in which political parties participate, in which various concrete programmes and policies

are discussed and mere platitudes and generalities eschewed, and argument is directed to deliberate searching for the maximum common ground rather than to magnifying differences. Ultimately, a consensus may emerge which gives a charter for the national economy to move forward.

If this can be done, i.e., if public understanding and political support can be mobilized behind what the people as a whole consider to be the minimum objectives of the society for which they are prepared to work and, if necessary, sacrifice immediate gains, then conditions are created which will be conducive to really big things being done. The existence of basic agreement on objectives will no doubt change the role of political parties but they will all have plenty on their hands. Outside the field of basic agreement, their role would remain just the same as today. Even within the area of agreement promise will need to be judged by performance and there will be many occasions for display of political acumen.

Creating conditions for securing the understanding and willing cooperation of people is vitally necessary in a democracy because all kinds of people have to participate in the great enterprise of planned social and economic reconstruction. This participation is sometimes direct and sometimes indirect. To carry out one's duties diligently, honestly, efficiently, in a cooperative spirit, and with that little extra spark which makes all the difference; to accept one's social, economic and political obligations in the right spirit; to feel a sense of solidarity with the under-privileged people -- must be common to all. This will make all the difference between an atmosphere of confused discontent and of hopeful dedicated purpose.

Take the case of taxes. If the economy is to move rapidly to higher levels, the rate of savings and of net investment would have to be raised very quickly from 10 per cent of the national income now to about 20 per cent in course of the next 10 or 15 years. The popular attitude towards taxation must undergo a change. People should be persuaded and educated to think that equitable taxation is a very purposive instrument of policy in the hands of a progressive society and a potent means of income distribution. If the change is not very abrupt in a growing economy, it need hurt none. By enabling the community to save and invest more, greater and better employment is created and additional incomes are generated.

It has to be brought home to the people by an enlightened political leadership that equitable taxation is by no means an imposition in a democratic progressive society seeking development on a planned basis. It is indeed the expression of the organized will of the people to achieve their social objectives. If there is an honest effort to understand the issues and no reluctance to put the facts before the people, it may be easy to show them how effective taxation can subserve the

democratic purposes and thus dispel their suspicion, overcome their opposition, and win their support. Most of what revolutions are believed to do can be done in a rational, orderly way by a united democratic community through willingness to tax themselves if required.

There will be numerous situations in which better understanding by the people will enable a smoother and quicker transition from the present level of the economy to a higher level. Until people begin to see the fuller significance of their limited actions; to realize how vitally important it is for a country struggling to go forward, improve efficiency, make the best use of scarce resources, avoid waste, not indulge in profiteering, tax evasion, adulteration, and other anti-social activities; and until they see their own place in the scheme of things -- their efforts will fall short of requirements and possibilities.

Another example of popular understanding based on knowledge of full facts and a proper perspective leading to rational decisions is provided by the case of regional conflicts which arise in the course of development. When the pace of development is slow, people in different regions do not have sufficient opportunities for development. They naturally seek to draw various projects to their own area, using all the political pressures they are capable of, hoping thereby that both the supposed interest of their region and the interest of the nation would be reconciled. It is not fully realized that wrong locational decisions, wrong policies regarding dispersal of industries, can slow down the process of development itself. The country as a whole loses and, as the region is a part of the country, the region also loses ultimately.

It is very difficult to carry conviction, to people whose interests are at stake, with this simple argument of national interest when their thinking is confined to a short horizon of time, and the alternative of letting the project go is to have no project for the region at all. But the proposition would be seen in a different light if the needs of different regions were to be clearly anticipated in a perspective plan of, say, 15 years, so that people of every region are able to find their own place in an over-all design of development, with activities spelt out in space and over time. There could then be a reasonable chance to persuade them to wait their turn in respect of their own share of projects which would be both to their benefit and that of the nation, instead of clamouring for other [projects] manifestly unsuited for their region. In this way, regional and national interests could be reconciled.

Thus, an important role of a perspective plan at any period of time is to create the necessary understanding and public support for a pattern of economic and social development which seems to satisfy the

aspirations of the society. This has to be done in various stages through discussion, through testing the reaction of people to various alternatives and their respective implications, and through careful and comprehensive analysis of all problems. In a democracy, planning has to be done in the full knowledge of the people and with their participation. This means that planning should not be the preserve of a few people exercising undue influence or authority merely by virtue of their position. Planning should not be an esoteric subject, it should not become a preoccupation with mere mathematical models, but must all the time be imbued with a real social purpose, always concerned about the basic problems, always seeking ways of anticipating and overcoming difficulties, never becoming stale and complacent, and ever seeking to widen the area of popular participation. In these various ways, perspective planning plays an important role in creating the necessary opinion for right and bold action.

[Capital Formation and Investment in Industry has been copyrighted by the Economic and Social Studies Conference Board, Istanbul, Turkey, and will be published by the Board in April 1963. The above material may be freely reproduced, provided credit is given to the author, the book, and the publisher. Capital Formation and Investment in Industry may be ordered from the Economic and Social Studies Conference Board at Beyoğlu, Imam Sokak No. 5, KAT 3, Istanbul, Turkey. The price is expected to be US$5.00.]

PUBLIC COOPERATION IN ACHIEVING DEVELOPMENT GOALS

[If long-range development plans are to be effectively carried out, there must be willing cooperation among three essential groups -- the technical experts who prepare the plan; the political leaders and administrators who adopt the plan and are responsible for its execution; and at least a majority of the farmers, workers and entrepreneurs who do the actual working, saving and investing required to make the plan a reality. Such cooperation depends in part upon adequate communication among the three groups. The planning experts must make the results of their technical work intelligible to political leaders and administrators, so that they can clearly understand the nature and consequences of the alternative policies and programs from among which they must choose a particular course of action for the country. The political leaders and administrators must be able to explain the plan in simple terms to the people so that they can understand the benefits that will eventually accrue to the country and the actions on their part necessary for achieving them. In turn, the people must have means for acquainting both planners and politicians with their aspirations and problems, so that the development plan and its implementation can be realistic and capable of evoking strong popular support.

The reasons why planners and political leaders have to enlist the cooperation of the people in the development effort, and some of the methods of doing so, are explained in the following excerpts from an article by an experienced Indian social welfare administrator. His discussion is followed by concrete examples of some of the ways by which the governments of two countries -- Nepal and Jamaica -- are trying to explain development goals and problems to their people.]

India -- Stimulating Public Cooperation

J. F. Bulsara

[From "Public Co-operation --
Role of Voluntary Organisations";
The Indian Journal of Public Administration,
the Indian Institute of Public Administration,
New Delhi, Vol. VII, No. 3, July-September,
1961, pp. 353-363.]

[These are excerpts from the original article. The author is J. F. Bulsara, now Member of the Indian Central Social Welfare Board; he was formerly Deputy Municipal Commissioner, Greater Bombay, and United Nations Far Eastern Social Welfare Representative.]

India has set as her objective development in a democratic way. This is bound to be slow, but it can be steady and sure if extraneous forces do not deflect her from her charted course by involving her in destructive and therefore impoverishing conflicts. Since she has chosen the democratic way of developing her economy and improving the low standards of living of her vast masses, her need for public co-operation is going to be very great indeed. This co-operation can be called forth only on the basis of the fullest possible enlightenment of the people regarding her programmes, projects and policies. And the people mean all people or at least the majority both of workers and leaders. Here, we have to apply the test of detached scrutiny to find out whether the entrepreneurs are fully co-operating with the Government in the development of industries, the peasants are co-operating with it to increase agricultural production, and the workers are co-operating with the entrepreneurs for higher per capita productivity. For, it is only by developing national resources and increasing production that we can expect to increase national wealth, and by the equitable distribution of the increased national product, we can help raise the all-round low standards of living of the generality of our people.

In any economy, some persons and groups will always grumble and some will be genuinely hard hit. This is inevitable in any society which is so unevenly structured as ours, and it is an inevitable price it has to pay for its rapid change from an unplanned and unequal evolutionary past. Nor should any Government expect in such circumstances 100 per cent co-operation or that 100 per cent of the public will side with them.

An appeal to the citizen's patriotism and the inducement of financial assistance have been the two methods extensively used by Governments for centuries to foster public co-operation. The first, however, is effective more in times of external danger, real or bolstered up -- at times even by specious propaganda. The second is a short-lived technique as no Government can eternally pump free grants of money to get intended work done by the loosely organised public, when it has at its disposal an organised and paid machinery of bureaucracy. We must, however, readily admit that the above two methods of an emotional appeal to local pride and patriotism and a free, restricted or conditional grant-in-aid system are, and will remain for long, effective techniques of calling forth a good deal of voluntary effort and public co-operation. The Central Social Welfare Board, with its extensive grant-in-aid programme to voluntary welfare organisations, constituted by the Government of India in 1952, is an example of the second method.

Another feature of governance, essential in a democracy seeking public co-operation, is a continuous readiness to consult representatives of various interests when legislation or administrative measures affecting them are sought to be introduced. In very rare cases can secrecy, taking the public unawares, and last moment dissemination of information be justified with regard to the ordinary economic, financial and political affairs or transactions of the state, or legislative and administrative enactments to regulate the same. It is, therefore, essential to devise a regular machinery of consultation with pertinent interests and sections of affected public in all matters of social and industrial legislation, except in the few cases of confidential matters of state, if the Government desires whole-hearted co-operation of the public in the rapid and effective implementation of its programmes. It has to be realised that democracy is government by the consent of the people.

In fact the mistake that most countries, intent on development, seem to be making is to ignore the value of spending a few months on enlightening and educating the illiterate and semi-literate people by fully acquainting them with their intended plans and programmes and getting the affected people's imprimatur for them. Wherever a government agency has spent a little time, money and energy on acquainting the people in advance, they have reaped rich and rapid results in the subsequent implementation and fulfilment of their programmes.

Government has to be prepared to foster, promote and help in establishing the needed voluntary social service organisations. India's tradition has been largely towards forming these on a caste, religious or sectional basis. In our heterogeneous society, with neighbouring groups speaking different languages and following different creeds, it would be too much to expect voluntary organisations to arise spontaneously in required numbers to meet keenly felt civic, social or cultural

needs. For a long time to come, a three-fold inducement may have to be given to local communities to organise themselves into service societies and associations, viz., by way of partial grant-in-aid or meeting full expenses, technical advice and guidance, and trained personnel and training facilities. The work of the Central Social Welfare Board bears out the truth of this statement. It will have, however, to be remembered that Governments are spending public revenues, which they are supposed to have in trust and which they are therefore expected to spend wisely, well and with absolute integrity of purpose.

Proper machinery will have to be devised by the Government to supervise this voluntary work and obtain maximum results out of such co-operation. A proper publicity or public Communication Service and an efficient Counselling Service are required if the public are to respond in required numbers and satisfactorily to accomplish the programmes of services voluntarily undertaken by them. A considerable amount of training of a short-term duration will also be required for all the voluntary workers giving their voluntary services to meet the felt needs of society. Traditional concepts of procedure, incurring of expenditure, official red-tape, routine methods of audit objections, and the concept of public accountability will have to be suitably altered in order to facilitate the peculiar type of voluntary work, which was not contemplated to be assisted by Government, when these methods, procedures and rules were originally formulated. These will have to be adapted to the new needs of eliciting public co-operation on a massive scale.

Government, moreover, should not feel impatient about creating public interest in social work and welfare through voluntary organisations in a hurry. Public responsibility for social service cannot be aroused merely by spending large sums of money. In order that the spirit of service and public co-operation take deep roots in every community, considerable demonstration work and public education will have to be conducted through a few selected organisations, who are efficient and who enjoy the confidence of the general public.

Human society after the last two World Wars has taken on a character in which no Government will subsist long which cannot fulfil the citizens' expectations of good life and good government. No Government will be able to accomplish much by way of economic, social, cultural or moral development of its peoples unless and until it carries the preponderant numbers of people with it. The interests of modern Governments are identical with the interests of the people, and it is because of the ultimate validity of this concept that there should be in every progressive society a genuine, free and willing partnership between the Government or organised administration of the country and its peoples. There are definite techniques of enlisting this co-operation on a massive scale, and used intelligently, they can help Governments in increasing the pace of development as well as running the wheels of governance smoothly, silently and harmoniously.

Nepal -- Explaining the Delay in Starting the Second Development Plan

Rishikesh Shah

/From Policy Statement on Planning and Development; published by the Department of Publicity and Broadcasting, Ministry of National Guidance HMG, Kathmandu, 1962, 14 pp./

/At the beginning of this pamphlet, its purposes are explained by its author, who is Vice-Chairman of the National Planning Council of Nepal, as follows:/

The main purpose of this policy statement on Planning and Development is to inform the public that there will be a gap, or perhaps I should say, an interim period, between the completion of the First Plan Period and the initiation of the Second Plan.

A further purpose is to briefly acquaint you with some of the problems involved in bringing out a new Plan for our country. It would, of course, have been easier at this time to have presented a document full of promises and simply to have labelled it a Plan, as, I am afraid, has been done in the past. But, the National Planning Council has realistically approached the problem in the light of what we can do rather than what we would like to do. In this context, I cannot do better than quote His Majesty's remarks on Planning and Development in his Royal Message of January 5, where he said that in the past, "There was no overall planning outlook; no regard was shown to existing conditions, necessary resources, technical personnel and practicability; nor were schemes properly formulated. Individual and unco-ordinated projects were taken up in haste. The result was that on the one hand targets could not be achieved, and on the other, the limited resources of the nation were wasted."

The main theme of my remarks to-day will be to outline and to explain the correct course of action in the field of Planning and Development which the Government will be undertaking during this interim period.

/The main portion of the pamphlet explains the reasons for the shortcomings of the First Plan; describes the careful analysis of the country's potentials and limitations being undertaken by the Council as a basis for preparing the Second Plan; and outlines the priorities and

principles which will be used to guide the government in adopting and implementing the new Plan. A short and simple appendix presents the main statistical indicators of development progress during the period of Nepal's First Plan (1957-61).]

* * *

Jamaica -- Explaining
the Task Ahead to the People

[From Jamaica Now; published by the Government Public Relations Office, Government of Jamaica, Kingston, Vol. 5, Nos. 1 and 2, July-August, 1962, pp. 9-18.]

[Jamaica Now is a monthly government publication prepared to inform the people about significant national developments and distributed free in all parts of the island. It is profusely illustrated and written in simple language.

The July-August 1962 issue was especially prepared to commemorate the achievement of Independence on August 6, 1962. Half of the issue is devoted to pictures of the Independence ceremonies. The rest contains an explanation in illustrated charts and simple text of the nature and magnitude of the economic tasks that must be undertaken so that the newly independent country can provide a rising standard of living to a growing population. The main elements of the national accounts are presented, plus easily understood comparisons with other countries, both developed and underdeveloped, of per capita national income and production per acre of the country's leading crops.

The lessons of these statistics are drawn in the conclusions reprinted on the next page.]

As in Agriculture so it is in every other field. We must produce more if we are each to have more.

There is another problem:

Jamaica's population is increasing steadily. Every year there are thousands of additional persons who must be fed and clothed and housed, who must have school places, or jobs, etc.

If we produce the same amount of goods and services every year	There will be a smaller share for each of us each year.
If we produce just the extra amount needed to take care of the additions to the population	We will each have the same amount each year and will not improve our position.
In order to improve our level of living, to have more income, and to buy more	We must produce an extra amount of goods and services each year that will provide for the additions to the population and give each of us a bigger income.

To produce the extra amount of goods and services needed we must all

- WORK HARDER.
- WORK MORE EFFICIENTLY
- SAVE

Jamaica Now - Page 18

PUBLIC ADMINISTRATION AND THE THEORY OF ECONOMIC DEVELOPMENT

K. William Kapp

[From "Economic Development, National Planning and Public Administration," Kyklos; the List Society, Basle, Vol. XIII, Fasc. 2, 1960, pp. 198-201.]

[This article explains the need for more adequate public administration in less developed countries by analyzing in some detail the main substantive functions which must be performed by the various levels of government if growth is to be accelerated. The author's major conclusions are excerpted here.]

This is an excerpt from the article.

A quantitatively inadequate or qualitatively defective system of public administration will not merely retard the development process but may defeat the entire development effort in an even more decisive manner than any temporary shortage of capital or inadequate technical skills or an unfavorable monsoon. The attainment of the objectives of the plan depends upon the existence of a well-functioning decision-making machinery at all four levels: Central-State-District-Local. Without such an apparatus, the planning effort can neither be coordinated nor implemented. In fact, the process of economic development may never become cumulative and self-sustaining because the necessary economic, social and political reforms are not followed through.

K. William Kapp is Professor of Economics at Brooklyn College of the City University of New York.

Most important in this context are what we call qualitative defects, which lend daily support to a deep-seated and widespread suspicion and distrust of government in many underdeveloped countries. Qualitative defects, such as authoritarian indifference, perfunctory performance and general high-handedness, are particularly harmful because they obstruct and defeat the much needed mobilization of popular initiative and participation. They prevent large sections of the population from identifying themselves with the development effort. An autocratic, perfunctory or corrupt system of administration not only breeds apathy and distrust but widens the gap between the government and the governed. Indeed, [as Edward Shils has pointed out,] "corruption in government -- and we may add high-handedness in administration -- is pernicious not so much because of its wastefulness but because it discredits government, and gives it the air of injustice, which causes those whom it rules to withhold affection and loyalty. In consequence, the 'political gap,' the estrangement between rulers and ruled is widened, and no political society can emerge."

This is particularly serious in some of the new states where the primacy of loyalties to family, extended kinship organization and regional subcultures still stand in the way of national and political integration. In societies where kinship, caste, color or party membership are sources of special privileges and disabilities, the failure to implement the plan may actually deepen the traditional cleavages between factions and thus weaken rather than strengthen national unity. In short, a quantitatively deficient and qualitatively defective system of administration at the same time defeats the development effort and undermines the success of the nation-building process, which is a corollary of economic growth in the underdeveloped world.

Our analysis confirms the views of those economists and social scientists who have long argued that economic development presupposes institutional and social changes. By selecting and focusing attention on such variables as investments, technology, savings or foreign aid, economic theory may actually help to maintain institutional arrangements which have blocked economic growth in the past and may unwittingly lend support to economic policies which are beyond the organizational capacity and ability of the existing administrative machinery. The resulting delays and failures in the attainment of development goals are not only a costly and futile use of scarce resources but may actually endanger the development effort. Instead of attributing the slowness or insufficiency of economic growth to shortages of capital, inadequate foreign aid or to various ingrained attitudes and behavior patterns, it would be equally if not more realistic to consider the defects in public administration which defeat the implementation of the plan and reinforce prevailing attitudes of distrust and apathy as major obstacles to growth and development.

As a matter of fact, improvements in public administration may actually yield higher over-all returns than additional investments in specific industries. In so far as the productivity of capital investments, the mobilization of real savings and the response pattern of the people are dependent upon and vary according to the efficiency of public administration, it is possible to argue that the latter occupies a key position in the development process. Indeed, the so-called marginal social productivity of additional investments may be greatest in the field of administrative reforms. Adequate investments in such reforms, if properly conceived and carried out, may finally break the monotonous constancy of most ratios between input and output which have marked the stationary backwardness of the underdeveloped world. By enabling the economically less advanced countries to implement development measures, by effectively mobilizing their potential savings and by removing apathy and distrust and replacing them by initiative and participation, appropriate administrative reforms may well be the prerequisite of substantially lower capital-output ratios than have prevailed in the past. In short, improvements in the structure and efficiency of public administration are bound to give rise to more effective forms of cooperation and hence to new quantitative relationships and non-linear (i.e., jump-like) increases in output -- which is after all what economic development essentially amounts to.

However, it would be misleading to create the impression that the importance of administrative reforms has been totally ignored in the underdeveloped world. Problems of administrative coordination and decentralization in the existing state, regional and local administrative machinery are matters which are under discussion in many of the underdeveloped countries.

It is important to emphasize in conclusion that the successful analysis of economic growth and development requires an interdisciplinary effort. Specialized research and the construction of mathematical models may have its advantages as long as we are dealing with problems in a static socio-cultural environment. However, the study of economic dynamics and economic development in less advanced areas calls for a familiarity with different social structures and the interaction of their various components. In short, the scientific analysis of economic development requires conceptual frameworks which permit the consideration of institutional and political factors such as public administration, government, the power structure, apathy and distrust.

RELATING SHORT-TERM DEVELOPMENT PLANNING
TO THE GOVERNMENT BUDGET

[From Development Planning and Budgeting,
a paper prepared by the Secretariat of
the Organization of American States
(OEA/Ser. H/X.3, Reference Document #33),
October 1962, Washington, D.C., pp. 1-13.]

These are excerpts from the paper.

The magnitude and nature of the government budget are factors of prime importance in the development effort of a country. Only government can undertake the investments in infrastructure, without which development efforts cannot succeed. Furthermore, many essential activities, which in mature economies can be carried out efficiently by private enterprise, must also be undertaken by government authorities in the initial phase of development. Finally, many goods and services vital for growth are in little demand in underdeveloped economies, and their production therefore depends on an initial market assured through the demands from governmental agencies.

The primary role of government investments in development makes the task of budgetary authorities particularly crucial. Relative to the size of [underdeveloped] economies, the cost of traditional administrative functions -- unrelated to development -- is generally high, while total resources available to governmental agencies are limited. Under such conditions, resources must be husbanded carefully to leave a suitable margin for investment.

The administrative budget, prepared along conventional lines and containing limited detail on the nature of expenditures, is not well adapted to the task of proper allocation of government resources for development purposes. This procedure leaves only a very general picture of the nature and impact of government operations on the economy. Rarely does the budget

show the impact of government on capital creation; even where quantification is possible, conclusions can seldom be drawn on the nature of the capital created. Finally, traditional budgeting does not indicate the impact of government operation on the quantity and kind of goods and services produced.

The present paper is intended primarily to help correct this situation by giving some assistance to planning officers in the planning agencies or in individual ministries in some basic principles and techniques of budgeting as applied to development and planning. To this end relationships between planning and budgeting are pointed out, and a simple breakdown is suggested between development and non-development expenditures. As the standard system prepared by the UN technicians /see A Manual for Economic and Functional Classification of Government Transactions, United Nations, New York, 1958, US$2.00./ represents the best general approach, only minor modifications have been introduced in it.

Three caveats may be in order:

(a) The planning budget is not meant to replace the legislative budget. The latter is determined by law and by the customs of a country; it governs overall fiscal policy. The planning budget is designed only as an aid in the preparation and implementation of public sector expenditures and receipts within the framework of economic and social development planning.

(b) The legislative and planning budgets are generally prepared by different government agencies. In some countries, however, the planning agency has been entrusted with the task of preparing a capital budget for legislative action. In other instances, there may be an overlapping of the budgetary functions of the planning board and the fiscal authorities. The closest cooperation and coordination between the two units is, therefore, always highly desirable.

(c) Attention is drawn to the difference between appropriations and actual disbursement of funds. Whatever may be the proper procedure in the legislative budget, the actual disbursement should be shown in the planning budget.

Relationship of Planning, Programming and Budgeting

Budgeting is a major element in the process of planning for development. This process involves first the defining of goals and objectives, and then the formulating of courses of action to achieve these objectives, and then selecting a preferred course. This becomes the plan or program. Within the public sector, the government budget translates this program into specific project expenditures. Budgeting

techniques enter at various points into the planning process; they include careful analysis of cost and benefits of all projects, facilitating comparison among alternative courses.

Long-range or perspective planning sets goals over a period of years in terms of total output, income, employment, and other macroeconomic variables, with principal sectoral breakdowns. The projection period is a function of the speed at which structural changes are projected to take place in the economy. Such planning requires a general appraisal of the main economic and social problems faced by the country, although the setting of overall goals or the determination of a development strategy does not require precise quantitative analysis. In any event, structural changes in the economy lie largely outside the realm of statistical projection. As a result, common sense and judgment are essential elements in this formulation.

Short-term planning should result in an operational program for two to three years within the context of a long-term plan. Where a long-term plan has not been prepared, a short-term program provides the necessary discipline for integrating projects which might otherwise be conceived as isolated units of economic activity. Integrating projects helps to determine the total effect of the individual items on national income, employment and demand; hence, the projects can be correlated with the aims of the development policy.

A short-term program for the public sector is further broken down into annual plans which are formalized in the yearly budget document. This enables the calculation of the physical and financial resources required for the implementation of the program in a particular year. The budget can then become useful as an instrument of planning and analysis if it presents economically meaningful breakdowns. A clear separation must be made between the capital and current accounts, including both expenditures and receipts, and items must be correctly classified according to their functional and economic nature.

The current account includes receipts and expenditures which are recurrent in nature. They are the direct consumption expenditures by the departments and agencies of the public sector: they include purchases of commodities with a life of no more than one year, wage and salary payments (except for work performed on investment projects), transfers to individuals in the form of social security benefits, scholarships, and other subsidies to private individuals or enterprises, all of which add to the disposable income of the community. To meet these expenditures, the public sector appropriates part of the income of the community through taxes and obtains, in addition, receipts from a variety of non-tax sources, such as license fees, investment income on government loans, and income from sales or services to the community.

The capital account includes those items of expenditure which represent physical asset formation, provided the life span of the items purchased or constructed is more than one year. It also includes grants by the government to the private sector for the purpose of private capital formation. To meet these expenditures, the government draws on government savings (the budget surplus), and on domestic or foreign borrowing.

The current capital account breakdown is then supplemented by a further detailed classification according to economic and functional criteria. The economic classification includes wages and salaries, purchases of goods and equipment, and transfers, including interest payments on the public debt. Its importance derives from the fact that each of these expenditure types differs in its impact on the economy.

The functional classification has another basic objective. Its purpose is to group all expenditures in a specific field of activity under the same heading. Health, education, and transport are among the principal categories in this classification. True, expenditures on a given function are generally included under one department or ministry already. However, in some cases, expenditures cut across department lines and the conventional budget does not provide a full picture of the total effort of the government in any specific area. This is frequently found, for example, in transport and communications. In other cases, expenditure may be undertaken for similar purposes by governments on different levels. An example of this would be educational expenditure undertaken by the central government and also by local government agencies.

There is, finally, a third dimension which is extremely useful for the establishment of a clear and precise relationship between budgeting and short-term programming. It is based upon a criterion which distinguishes between expenditures relevant to economic and social development and those which are not relevant to such development. This classification cuts across the previous separation into current and capital account, since elements of both types of expenditures may be relevant to development purposes.

The above procedure for classification of expenditures for short-term planning and budgeting recognizes the annual budget not only as one step in the direction indicated by long-term programs and projections, but also implies the need to adjust the mechanics of formulating and presenting government budget by economic classifications. Short-term programming and budgeting can be undertaken simultaneously. This requires simplified initial classifications which can be improved upon in later stages.

The short-term plan and the capital budget are instruments of analysis and planning. By no means should they be interpreted as substitutes for the administrative budget, which must be drawn up in accordance with the law in force.

Current efforts at improving budgetary techniques so as to facilitate analysis and executive management place considerable emphasis on the use of performance budgeting. Essentially, this technique relates all expenditures to specific tasks and is particularly useful in connection with the normal administrative operations of government. Among developmental expenditures, such items as extension services performed by government agencies lend themselves particularly well to performance budgeting.

Since the relationship between planning and budgeting is very intimate, good organizational liaison must be maintained between the agencies performing these two functions. Other agencies must also work in close cooperation and harmony with the planning and budgeting units; in so doing, they will improve the performance of all concerned. Close cooperation will benefit the planning agency by giving it easy access to the data concerning evaluations and appraisals of the projects in progress or under consideration. It will also benefit the administrative agencies by giving them a better understanding of the national plan and of their role in it.

In the preparation of the capital budget, the need for coordination between the budget office and the central planning agency should be particularly emphasized so as to arrive at an agreement on the amount of financial resources likely to be available for capital investment. Revenue receipts and current expenditures must be estimated first, a task which is usually the responsibility of the Ministry of Finance. The estimate of the annual capital investment outlay needed to carry out the approved program is generally the responsibility of the planning authority. Since two interdependent functions are assigned to two separate agencies, there is need for a joint procedure. Special consideration must also be accorded to those current expenditures which are essential to complement capital expenditures. The sharing of responsibility should also make possible a rephasing or modifications in long-term plans and would permit effective participation of planners in plan implementation.

The Current Account Budget

While the preparation of development plans gives special emphasis to capital expenditures, consideration must also be given to the level of current expenditures required to implement the objectives of the investment program; as an example, the construction of new school rooms will eventually be followed by the hiring of additional teachers.

Budgetary provision must, therefore, be made for funds to cover these investment-derived expenditures.

Moreover, in some fields a major portion of developmental expenditures may actually be found in the current account. This would be the case, for example, with regard to the expansion of extension services required to develop agriculture, which would call for expenditures for personnel and short-lived training aids.

For government enterprises, the purchase of goods will generally be the major item of current expenditure. In practice, both for enterprises and general government account, the major difficulty in recording these transactions is the allocation between capital and current account of maintenance expenditures for equipment, building or other capital assets. In most cases, replacement of parts or general repair work can be readily recorded in the current account; for major expenditures on repair it may be difficult to draw a line between capital and current transactions. In the case of road maintenance, for example, major improvements in the existing road system (for example, paving a dirt road) can be treated as a capital expenditure. No rigid rule can be established here, and local conditions and habits will play the principal role in determining the way in which the expenditure is classified.

The Capital Account Budget

Capital account expenditures represent physical asset formation by the government and by its instrumentalities. They include: (1) expenditures on the acquisition of existing land and buildings; (2) expenditures on new construction, machinery, furniture, and equipment, and on major alterations to buildings and structures (new construction is separated from expenditure on existing land and structures because the latter represents only a transfer of assets from other sectors of the economy to the government sector); (3) increases in inventories; and (4) capital transfers, that is, grants to non-government sectors for the purpose of physical asset formation.

By and large, the detailed presentation of the capital account model shown in Table II of the Appendix is the one presented by the United Nations in its Manual for Economic and Functional Classification of Government Transactions. It is sufficient to point out here in a consolidated manner the most important items of the UN Capital Account Table. On the payments side, these are as shown in the following table:

Major Categories of Expenditures Under Capital Account

1 Item	2 Total (3+4)	3 Developmental	4 Non-Developmental
1. Purchases of land and existing buildings			
2. Gross capital formation			
a. New construction, machinery and equipment			
b. Increases (+) in inventories			
3. Capital outlays for military purposes			
4. Capital transfers			
5. Loans and advances			
6. Total capital			

Item 1 includes purchases of land and existing buildings by government departments and other official agencies. Item 2 includes all expenditures on goods and services related to capital formation. It includes expenditures on new buildings or other construction (including in each case wages and salaries of government directly engaged in such activities, as well as machinery and equipment and increase in stocks). It covers also net changes in stocks, presented under item 2-b. The value of such changes is measured on the basis of commercial accounting practices.

Gross capital formation attributed to government departments and public enterprises should be shown separately. Similarly, net increases or decreases in inventory needed for construction jobs and inventories of public enterprises should be segregated from changes in stocks of strategic materials like surplus food, coffee, fertilizers, etc., held by administrative departments for policy reasons.

Item 3 includes expenditures on new construction and machinery and equipment for military purposes, such as army barracks, naval dockyards, airports, etc. The construction of roads having no other than military use (which would be unusual) should also be included here.

Item 4 represents payments which the recipients, such as local governments, public enterprises, private enterprises, and households, regard as paid into their capital accounts. Local governments receive payments for various purposes, such as irrigation projects, municipal roads, hospitals, and schools. Public enterprises may be given grants to finance their investment programs and projects. Public credit institutions may borrow funds from the government for the purpose of relending them to enterprises and individuals engaged in the promotion of economic policy objectives. Also included in this item are transfers abroad for capital formation.

Item 5 covers money lent to various types of borrowers. It includes both negotiable and non-negotiable loans, which should be itemized separately. This item also includes changes in subscriptions to the international lending agencies, such as the International Bank for Reconstruction and Development, the International Monetary Fund, the Inter-American Development Bank, etc.

Since the capital account is an instrument for translating the short-term plan into action, it should be presented in such a way as to bring out the clear-cut relationship that can be established between the two. This can be done by dividing the capital account into two parts -- developmental and non-developmental -- as suggested in Columns 3 and 4 of the capital account tables.

A precise line separating developmental from non-developmental expenditures is difficult to draw, since local political, economic, and social institutions will primarily determine the separation. Public expenditures which contribute in some proportion to national income growth will be considered developmental. In addition, the following suggestions for classification may be offered:

1. Where an investment plan has not been formulated, all expenditure on buildings and equipment contributing to the growth of the gross national product, in the short and long run, can be classified as developmental.

2. Expenditure on buildings and equipment by government departments involved directly in the execution of the plan will also be classified as developmental; expenditure by departments not directly involved in the execution of the plan are classified as developmental only when the new construction or purchases are made necessary by the additional workload caused by the development projects.

3. Expenditure on military structures and equipment, such as tanks, barracks, and naval ships, will generally be classified as non-developmental. When funds allocated to the military are spent on construction of roads for both military and civilian use, these will generally be classified as developmental.

The broad categories of receipts under capital accounts are shown in the table below:

Financing of Capital Account Expenditures

1. Surplus (+) or deficit (-) on current account
2. Sales of existing capital assets
3. Capital transfers
4. Repayment of loans and advances (-)
5. Net direct borrowing
6. Total financing

Item 1 represents the surplus or deficit on the current account arrived at by deducting current expenditures from current receipts. Item 2 includes sale of capital assets such as buildings, machinery, and equipment. Item 3 covers compulsory and voluntary transfers from domestic and foreign sources. These transfers include subsidies, gratuities, gifts, etc. Repayment of loans and advances made to local governments, public enterprises, private enterprises, or households are listed under Item 4. Item 5 includes direct borrowing from the Central Bank, commercial banks, local governments, the private (non-banking) sector, and from foreign countries.

[A model set of detailed tables for the current and capital accounts is presented and discussed in a 20-page appendix.]

DEVELOPMENT STRATEGY AND FISCAL AND MONETARY POLICY

CONFERENCE ON INFLATION AND GROWTH IN LATIN AMERICA: SUMMARY OF SESSIONS

Richard Ruggles

[From the "Summary of the Conference on Inflation and Growth in Latin America" presented at the concluding session of this Conference, held in Rio de Janeiro, Brazil, in January 1963.]

[This Conference, held in Rio de Janeiro from January 3-11, 1963, brought together a group of outstanding economists from Latin America, the United States, Western Europe, and international organizations for an evaluation and discussion of the relationship between inflation and growth in Latin America and of the measures which could be taken to reduce substantially, if not eliminate, inflationary pressures and promote economic growth. The Conference was sponsored by five private research organizations in Latin America and the United States: the Institute of Economics, University of Chile; the Di Tella Institute, Argentina; the Vargas Foundation, Brazil; the Economic Growth Center of Yale University, United States; and the National Planning Association, United States.

Excerpts from the Summary begin on the next page.

A number of the participants prepared papers prior to the Conference and others were asked to be discussants of these papers in a series of panel sessions

Richard Ruggles is Professor of Economics at the Economic Growth Center of Yale University. He was Chairman of the Conference.

dealing with the theoretical concepts for analyzing growth and inflation; the institutional and statistical requirements for effective policy making and implementation; comparative analyses of inflationary experiences in various Latin American countries and in other parts of the world; and policies for achieving growth with monetary stability in Latin America. In the latter panel, papers were presented and discussed on changes in economic structure and income distribution, and on fiscal and monetary policies, investment policy, and foreign economic policies. The full proceedings of the Conference will be published by Richard D. Irwin in the fall of 1963 as a publication in the Yale Economic Growth Series.

At the concluding session of the Conference a summary of the main points covered and the consensus reached was presented by the Conference Chairman, Professor Richard Ruggles of Yale University. Excerpts from this summary are printed below. In addition, abridgments of two other papers delivered at the Conference will be found beginning on pages 9 and 60.]

It is not that there is any lack of explanations for the inflation and growth experiences of the different Latin American countries. Rather, there are too many conflicting points of view and it has been the purpose of this Conference to sort out and clarify these various explanations.

The two most prominent explanations are the monetary and structural theories of the relation between inflation and growth.

The Monetary Analysis of Inflation and Growth

The monetary school stresses that the control of inflation should be one of the major objects of economic policy in the developing economies. Economists of this school recognize that rapid economic development is likely to provoke inflationary pressures. Therefore one of the problems calling for high priority attention on the part of the authorities in a rapidly developing economy is the restraint of inflation. In essence, the monetarists believe that price stability is a necessary prerequisite for sustained economic growth.

In their view, a continued inflation diminishes the volume of resources available for domestic investments. Not only is a country's saving reduced, but a significant part of this saving is channeled to foreign rather than domestic investment, and simultaneously the flow of capital from abroad is discouraged. Furthermore, a substantial part

of the reduced flow of resources for domestic investment is diverted to uses which are not of the highest social priority. The accumulation of large inventories is encouraged. There is a diversion of saving from capital markets, where investment decisions are subject to longer term economic criteria. Luxury housing and other kinds of less socially useful investment, which may be highly profitable because of the inflation, are undertaken.

Balance-of-payments difficulties also result, and to reduce the foreign deficits the authorities are forced to resort to controls, which in most cases protect uneconomic production. Political pressures lead to further restrictions which create further distortions. Economic activity thus becomes steadily more distorted.

In cases where the economic system has been allowed to get out of hand, the authorities must decide to stabilize or not to stabilize. The monetarists agree that the process of stabilization is difficult, but they argue that, difficult or not, it is the necessary basis for more rapid economic growth.

The theory that there cannot be development with stability and that development brings about inflation is not valid according to the monetarists. There is no dilemma between stability and development. In the long run, the alternative is not between development with or without inflation, but between development without inflation or stability without development. The monetarists do not claim that development with stability can be achieved through the exercise of monetary policy alone. They maintain that monetary policy is essential, but that it is only one of the elements which will be required. They recognize that well-designed fiscal policy and, in some cases, other more direct controls may be required. They are fully cognizant of the need for basic reforms, such as land reform, increased emphasis on education, and provision of social capital for the purpose of fostering economic development.

The Structural Analysis of Inflation and Growth

The structuralist school looks at the situation somewhat differently. It argues that in developing economies with rapid urbanization, structural maladjustments themselves may be responsible for imbalances which cause unavoidable price increases, and that the attempt to restrain such price increases may result in unemployment and stagnation, which may further lead to political instability that threatens the very existence of the economy.

From the structuralist point of view, the growth of real income and economic potential in a country increases demand in some sectors of the economy where, because of bottlenecks, the supply of goods does

not or cannot expand. For example, it is argued that a rise in real income will increase the demand for food on the part of industrial workers who are receiving more income for their expanded role in the production process. Agricultural output increases slowly in most Latin American countries, as a result of technological and institutional rigidities. The increase in consumers' purchasing power, therefore, results in a rise of prices for food and other agricultural products. There is no compensatory fall in prices elsewhere in the economy to offset the price increases in food. This is due partly to the fact that wages are not readily flexible in a downward direction so that producers are faced with relatively rigid costs. In these circumstances, they will not and cannot reduce prices. Furthermore, since the increase in food prices is not due to a redistribution of income but rather to an increase in total real income, the demand for non-agricultural goods will also rise, so that there is no economic reason why prices in this sector should fall.

The increase in food prices sets off further price increases elsewhere in the economy via its impact on the cost of living. With the initial rise in the cost of living, there will be immediate pressure to raise wages. Governments usually respond to such pressure by raising the minimum wage rate. Unless there is a fall in employment, an increase in wage rates will result in larger wage bills and thus in an increase in purchasing power, which in turn will cause an additional increase in food prices. In this way, an upward price spiral is generated.

In some countries, other sectors may create structural difficulties. One that has often been cited is the foreign sector. Export earnings may not keep up with the growth of the rest of the economy. This may be due either to a failure of the export industries to grow, or to a continual decline in world prices of export goods. Under such conditions, it is argued that the increase in real income in the economy will cause an increase in demand for imported goods, which in the face of the failure of export earnings to rise at a similar rate will result in balance-of-payments difficulties and a rise in the prices of goods in the import sector. To the extent that import goods are directly reflected in the cost-of-living index or are indirectly linked through the supply of capital goods or raw materials for production, the price increases in this sector may generate a price-wage spiral.

This, then, is the mechanism of the relation between economic growth and prices as envisaged by the structuralists. An upward pressure on prices is considered a necessary concomitant of economic growth -- a side effect which cannot be eliminated except by reducing over-all growth to the rate of growth taking place in the bottleneck sectors. Therefore, according to the structuralist position, the maintenance of complete price stability in an economy would condemn that economy to a slow rate of growth, and at best to the rate of growth of its export sector.

Differences

The difference between the monetary and structural positions essentially comes down to the difference in their view of the nature of price increases in the economy. The monetarists consider that price stability is a prerequisite of rapid economic growth and that governments should give price stability high priority and take the necessary measures, despite their difficulty, to ensure price stability. The structuralists consider that, in an economy with major bottlenecks and weak export markets, the attempt to achieve price stability through monetary or fiscal means will result in unemployment, under-utilization of industrial capacity and slow growth.

Statistical and Administrative Requirements for Stability and Growth

Merely because wide differences exist in their basic theoretical analysis of the relation between inflation and growth does not mean, however, that the monetarists and structuralists disagree on all questions of economic development.

For example, considerable consensus has emerged at the Conference in the discussion of the statistical requirements for controlling inflation and stimulating economic growth. Both monetarists and structuralists agree that statistics on the structure and operation of the economic system are required for the design and implementation of current economic policies and for development planning. There is an increasing realization that the estimation of a few macro-economic aggregates is not sufficient. To formulate a consistent and workable development plan, a fairly detailed picture of the economic situation in a base year and of past development during a reasonably long historical period is needed. A quantitative assessment of general economic growth during recent and past years and of the contribution of the various industries and factors of production to this growth is required to reveal the basic weaknesses and strong points in the economic structure and to show to what extent a balanced development has so far been achieved. To obtain an idea about the investment effort necessary for an increase in product of a given magnitude, it is also necessary to know the share of total resources which, in the recent past, has been devoted to the building up and renewal of the capital stock. The more detailed such analysis could be made, the more significant it would be, and to achieve a reasonably detailed analysis at least some information about investment by main sectors of the economy is needed.

National income and national accounts estimates furnish the raw material for the construction of balances of total demand and supply by main components, which are indispensable in revealing the existence and sources of inflationary pressures or of pressures on the balance of payments. The existence of such balances makes it possible for the

policy makers to take measures which may prevent future monetary disequilibrium or a balance-of-payments crisis during the implementation of a plan.

National budgets, or one-year economic plans, which present as complete a picture as possible of the likely development of the economy in the year to come and are intended to form a consistent framework for short-term economic policy, have been found useful in many countries. The national budget is usually presented to parliament together with the government budget or as a supplement to it.

No Latin American country so far prepares a national budget of this sort, but the need for such a tool is evident. Several countries are in the process of changing their budgetary procedures by adopting program and performance budgeting and more analytically meaningful economic-functional classifications of their government budgets which could be directly fitted into a national budget. No doubt the main reason why complete national budgets have not yet been formulated is the lack of statistics on which to base them. For national budgeting, up-to-date, reliable and fairly detailed national accounts data are indispensable.

It should be emphasized, however, that more than national income accounts will be required. Other forms of economic accounting, such as input-output, flow of funds, and sector balance sheets will eventually be required. It is important that all of these different kinds of economic data be fitted into a single comprehensive and integrated system of economic accounting which will ensure consistency and complete coverage of the economy so that those making economic policy can move easily from one kind of data to other kinds of data about the economy. There was a general consensus in the Conference that the lack of adequate economic data was impairing economic policy formulation and implementation in Latin America, and that a very high priority should be given to the development of the necessary underlying statistical sources.

Comparative Analysis of Policy Instruments

The Conference's discussion of policy instruments in relation to inflation and growth pointed up a consensus that monetary and fiscal policies alone were not sufficient to insure stability and economic growth. If countries desire to have economic development at a rapid pace and with social orientation defined according to the preferences of the authorities, they cannot expect them, along with stability, to result from spontaneous market forces alone. These forces are indispensable within the system of free enterprise, but they are not enough. In order to attain all the objectives indicated, controls of different kinds are needed, taking into account that some countries will be prepared

to accept certain types of controls while others may prefer different ones. Acceptance of controls presupposes the acceptance of certain losses of freedom, and there will be different attitudes depending on the kind and degree of freedom which are lost.

Merely because fiscal and monetary policy cannot be considered sufficient instruments for rapid economic growth and stability does not of course mean that they are not essential elements in any development program. Only with proper credit controls, adequate tax systems, and responsible government expenditures can a development program succeed.

It is very important that development plans not be overambitious in envisaging an investment program which is beyond the real domestic and external resources of the economy. Both monetary and fiscal policies are important in helping to make a high investment level possible by preventing excessive internal competition for specific resources or over-all excess demand. Selective credit controls which affect different sectors of the economy differently may be very useful. Similarly, differential tax treatment of different kinds of activity and careful planning of government expenditures can make fiscal policy more effective.

In addition to these controls, wage policy may be an important element. Much of the inflation taking place in Latin America has been further accentuated by the price-wage spiral and, although the underlying political conditions may not permit stopping all interaction, it is possible that the interaction may be somewhat modified.

There is also need for policies in the foreign sector to help maintain the balance of payments and to insure that external resources are used insofar as possible for development purposes.

Finally, there are of course a whole host of more specific economic policies aimed at specific sectors in the economy. Thus, export industries may be directly or indirectly stimulated. Educational policy should be directed at providing the technical and administrative personnel required by economic development. Other policies designed to improve the mobility of resources and reduce institutional frictions should also be considered. It is in this context then that policy instruments for growth and stability must be evaluated.

Change in Economic Structure

In the discussion of changes in the economic structure, the panel members were in agreement that there were very serious structural imbalances which were preventing rapid economic growth in Latin America. In almost all countries, there are sectors of the economy which represent bottlenecks in the expansion process.

There was some discussion of the degree to which the price signals in a free market economy would lead to the necessary expansions and contractions. Even under the most optimistic assumptions, there was a general agreement that some problem areas would require special consideration.

As has already been pointed out, the slow growth of agriculture has created serious difficulties in many countries. Special policies concerning land reform, improvement in the use of land, greater use of fertilizer, and even in some cases the introduction of farm machinery may help to increase the total output of the farm sector in these countries. In addition, there is a great need to improve the system by which farm products are marketed and distributed to consumers.

Another sector which was recognized as a common bottleneck was the public utility sector. Electric power, water supply, and the transportation system, including local transport, provide the backbone for urbanization and industrial development. A lag in these facilities seriously impairs economic development. From a financial point of view, these industries are often victims of the inflationary situation. Their costs rise with the inflation, but the prices they are permitted to charge lag far behind, creating deficits. It was argued that the relatively lower uneconomic prices over-encouraged the use of these scarce resources and at the same time discouraged investment in these areas because of the lack of profitability. Some defense was offered for the lag in prices in the case of local transport. Raising prices in this area would be very regressive and might embarrass governments politically to an extent over and above the gain achieved. In the case of other public utilities it was pointed out that a low price did encourage use of these services and the shortage of capacity in these areas was itself a powerful stimulant to expansion.

The discussion from the floor pointed up the necessity for increased emphasis on education. If there is to be rapid economic development, the requirements for educated, trained, and skilled manpower a decade hence will expand manyfold over their present levels. The present level in most Latin American countries is far from adequate and, in order to insure a sufficient future supply, immediate action is required.

Finally, the problem of the foreign sector was also discussed. The question was raised whether a correctly valued rate of exchange would by itself bring about the desired amount of import substitution and export expansion. Considerable doubt was expressed by some, who felt that frictions and lack of mobility of factors of production were such that adjustment would be too slow to accommodate a high rate of economic development. Furthermore, if long-term planning is undertaken, a government would be required to initiate in one period measures

which would insure the emergence of the industrial mix which would meet future requirements. It was suggested that if long-term planning is to be taken seriously and if a rapid rate of growth is anticipated, existing price signals may not be an adequate basis on which to build future industry. In this connection, it was urged that the question of economic integration of Latin American markets be considered. The export markets of Latin America may change drastically in the next several decades, and it is not at all inconceivable that these countries would become major exporters of heavy industrial manufactures, with the more highly developed countries specializing in technologically more advanced products.

Investment Policy

In the panel on investment policy, the view was expressed that there was no real proof that rapid inflation would raise the percentage of resources devoted to capital formation. Some members of the panel felt that the distorting effects would cause increases in inventories and housing investment. Other panel members indicated that, in the case of some countries, this type of distortion had not taken place despite considerable inflation.

Investment was recognized as a key variable in the economy -- key in part because it provides the basis for economic growth and in part because it is subject to control by economic policy. The view was expressed that excessive use of monetary policy to achieve price stability could be very harmful to investment. In such instances, the private sector is often squeezed in an effort to achieve stability for the economy as a whole.

It was pointed out that well-designed tax policy can play a significant role in stimulating desirable forms of investment and controlling the over-all level so that the economy does not attempt to employ more resources than exist. Stabilization attempted without careful planning as to where the impact of the restrictions will fall may have very serious economic and political repercussions on the economy.

The nature of the investment effort will, of course, be different for different countries. Several panel members indicated, however, that more emphasis on agricultural investment was desirable. There was no agreement on whether major attention should be given to investment in export industries or import substitution industries. In any case, it was pointed out that investment mistakes in fast-growing economies often were not as vital as in slow-growing economies.

Finally, the argument was made that inflation discouraged foreign investment due to exchange risk and uncertainty.

Foreign Sector Policy

The panel on foreign sector policy considered the problem of common markets. The high degree of intra-European trade in the European Common Market is in marked contrast to the lack of trade among the Latin American countries. Also, there are wide differences in the degree of inflation among Latin American countries and in the role of government in these countries. These elements make a Latin American common market somewhat more difficult to establish. Some panel members questioned the fact that the Latin American Free Trade Association had no provision for across-the-board lowering of tariffs and expressed the opinion that there might be more trade diversion than trade creation. Another comment pointed out the fact that the European Common Market discriminated against the present and potential export of manufactured goods by the Latin American countries.

International commodity agreements were discussed at length. Some panel members felt that these agreements were very necessary to prevent further deterioration in the terms of trade against the primary producers, but that it is also necessary to accompany these agreements with some system of production control in the supplying countries. There is also the very serious problem that many commodity agreements do not sufficiently favor low-cost producers, but rather continue to support high-cost producers.

Finally, concern was also expressed that the establishment of fixed commodity prices might be a deterrent to long-run adjustment in the demand and supply of primary commodities. It was, therefore, suggested by some discussants that a sliding scale of prices be established on an average of the prices over a preceding period. This would permit a downward pressure on prices to be distributed over time. Neither the panel nor the discussants could agree on the degree to which the terms of trade would continue to move adversely against primary material producing countries.

On the one hand, the view was expressed that there would not be another major depression in the industrial countries and that this was the major cause of the change in terms of trade which occurred during the 1930's. Along the same line, it was argued that current deterioration in the terms of trade was more apparent than real, since the quality of industrial goods and the introduction of new goods was not adequately taken into account in the price indexes of industrial goods.

On the other hand, the view was also expressed that, within any developed economy, the industrial sector benefits at the cost of the agricultural sector and it is for this reason that governments usually have domestic programs to support farm income so that the benefits of increased productivity in the economy as a whole can be extended to

the farm sector. It was argued that the same mechanism applies to the relation between industrial countries and primary material producing countries, and that, therefore, some mechanism was required to protect the terms of trade of these countries.

Monetary and Fiscal Policy

In the panel on monetary and fiscal policy, it was emphasized that monetary policy alone was not sufficient to stop inflation and that monetary policy could not be used to solve structural problems. The view was also expressed by some of the panel that structural factors alone could not be considered to be responsible for extremely rapid inflation. Some of the limitations of monetary policy that were cited were the inability to predict the behavior of financial groups and the role of financial intermediaries in the economy.

The monetarist position that inflation increases structural imbalances was presented. According to this view, investment is distorted during rapid inflation, resources are misallocated, productivity is impaired, the balance of payments deteriorates, and forced saving reduces the standard of living of the lower income groups. The suggestion was made by a number of panel members and participants that, in a rapid runaway inflation, the sooner the inflation was brought to a halt the better, and that a shock was necessary to accomplish this. The reason was that, since the expectation of rising prices had to be changed, it was not feasible to halt an inflation by slow degrees, and that experience showed that when inflations did stop, they stopped suddenly.

A number of participants disagreed with the desirability of achieving stability by shock. The shock required for stability might well be such that it would result in drastic unemployment, cut-back of essential investment programs of the government, or restriction of credit to such a degree that financial panic and business failures would ensue. It was argued that, from a political point of view, such a shock could produce extreme instability and would not be practical in many countries.

There was general agreement that fiscal reform was required in Latin America, despite the fact that in itself it would not stop inflation. Fiscal reform is necessary to permit better resource allocation and improve equity.

First of all, it was agreed, a more comprehensive income tax system is needed in Latin American countries. This would provide more equitable tax treatment of individuals. Besides income taxes, it is also possible to have progressive indirect taxes. At present many Latin American countries place taxes on imports of luxuries but, as import substitution comes about, attention must be given to the

desirability of taxing these commodities when they are domestically produced. Land taxes and taxes on capital were also emphasized as especially important aspects of any tax reform system.

One panel member reminded the group that the tax systems were subject to constitutional and legislative considerations. There is also the fact that the difficulty of applying taxes varies considerably by kind of tax and by sector of the economy. Thus, taxes on agriculture are more difficult to apply than those on corporations. Governments can improve the fiscal system considerably by reducing fragmentation in the administration of expenditures and revenue. A comprehensive overview of expenditures and the tax system cannot insure success, but it can avoid unintentional waste. It was also emphasized that, with respect to changes in the fiscal system, the problem of communication is very important. There should be participation of taxpayers in the development of the tax system. For example, tax hearings should be held and the government should endeavor to enlist the talents of lawyers and accountants in the development of the tax system.

Finally in this panel, there was some discussion of exchange rate policy. The view was presented that, except for currencies used as reserves (i.e., the dollar and the pound), the exchange rate should correctly reflect the true exchange rate. According to this view, this would encourage in proper degree the export industries and restrict consumption of imported goods. The effect of devaluation on inflation, it was suggested, was less than popularly believed. Others expressed the view, however, that foreign exchange controls were a proper instrument of policy to protect the balance of payments, restrain inflation, and stimulate economic development through the protection of import substitution industries.

The Distribution of Income

The final panel on the distribution of income did not find that inflationary pressures had very much effect on the relative shares in the income distribution. One unfavorable aspect is, however, the fact that some people profiteer because of the inflation and others are discriminated against.

The determinants of the income distribution in an economy lie in inequality in the holding of land and other assets in the system and in inequality in educational opportunities. One of the major routes of attack on inequality of income is to attack the sources of inequality directly. Thus, land reform in Latin America would do much to improve the income distribution. Over the longer run, increasing educational opportunities will improve the mobility of human resources, make the needed kind of manpower available for economic development, and improve income equality.

The point was made, however, that there is a sharp limit to the degree of redistribution of capital and income that can be achieved in the short run. There is a considerable danger of flight of capital and human resources if the redistribution is of a confiscatory nature.

Another method of systematic redistribution which was mentioned was a change in the prices of agricultural goods relative to those of industrial goods. Raising agricultural prices more than industrial prices will redistribute income between these two sectors. This kind of redistribution has taken place in Argentina; it is interesting to note, however, that it did not result in greater agricultural output.

Although it was recognized that income taxation alone could not achieve an ideal distribution of income, several panel members emphasized the need for a comprehensive income tax which would have wide coverage of income groups at relatively low tax rates. Such an income tax system should cover capital gains as well as other kinds of income. Even if such a tax system were mildly progressive at the lower income levels, it would have a favorable anti-inflationary influence. As incomes and prices rise in the economy the tax revenue which would be generated would increase faster than income, thus helping to put a brake on the inflation.

In conclusion, it is evident that although there have been many points of disagreement among the participants in this Conference, there have also been wide areas of agreement, and it is on these specific areas of agreement that policies for economic development in Latin America should be built.

OBSERVATIONS ON THE RELATIONSHIP BETWEEN DEVELOPMENT AND INFLATION

W. Arthur Lewis

[From a talk given at the Conference on Inflation and Growth in Latin America, held in Rio de Janeiro, Brazil, in January 1963.]

[The concluding remarks at the Conference on Inflation and Growth in Latin America were delivered by Professor W. Arthur Lewis. Given in a frank and informal manner, they focus on the main essentials, both economic and political in the relationship between inflation and economic growth. Professor Lewis' insights are relevant not only to Latin America, but also to all countries in which the financing of development is an important consideration.]

This is a reprint of most of the speech.

Thinking back over the many papers and speeches which we have heard during the past nine days, what stands out most clearly in my mind is the importance of distinguishing between factors which cause prices to start to rise, and spiral processes which keep prices rising on and on, far beyond any level that could be justified in terms of the original cause. Our economies have become much more unstable since

W. Arthur Lewis is Principal of the University College of the West Indies, and was Deputy Managing Director of the United Nations' Special Fund. He has also been economic adviser to the governments of several countries in the Far East and Africa. Among his books are Principles of Economic Planning (1959) and The Theory of Economic Growth (1955).

1945 than they ever were before. I use the word unstable in the technical sense, to indicate that, if for any reason prices move from what may in some sense be an equilibrium level, there are no forces to bring them back. On the contrary, powerful forces at once take over to send prices rising and rising and rising to levels for which there is no justification in the original cause which started them off.

The mechanism is familiar to us all, and is not confined to Latin America. Every country in the world, including the Soviet bloc, has either experienced it, or views it with apprehension. It has three contributing parts: wages, budgetary deficits and devaluation, and it runs somewhat as follows:

> First comes the original cause, which starts the mechanism working. This may be a rise in the price of domestic foodstuffs, or a rise in import prices, or an increase in the quantity of money, or a rise in the price of exports, or anything you like, provided it is something which raises the cost of living. Then the mechanism starts. Wages rise, and this raises prices more, wages more, prices more, and so on.
>
> Second, in those countries where the marginal ratio of government receipts to national income is below the average ratio, the price rise opens up a budget deficit, because government costs rise faster than government revenues. This gives an extra twist to the spiral.
>
> Third, the rise in prices forces devaluation, and this raises import prices proportionately to the devaluation and domestic prices in somewhat smaller proportion, so a third twist is given to the spiral.

What with wage pressures, budget deficits and devaluation, prices may rise continuously and at a high rate for reasons which have nothing to do with the original cause.

Failure to distinguish between the original cause and the spiral mechanism can only lead to confusion. If one asks why prices rise by 25 per cent per annum in Chile, it is confusing to be told that this is because agricultural output is growing less rapidly than the demand for agricultural products. Chile is only one of fifty countries where agricultural demand is growing more rapidly than supply. The difference between Chile, where prices increase by 25 per cent per annum, and India, where prices increase by only 2 per cent per annum, is not a difference in the elasticity of supply of agricultural output, which is equally low in both countries; nor a difference in the rate of growth, which is higher in India than in Chile. The difference is that Chile is in the grip of the spiral processes to a much greater degree than India.

The spiral is not confined to Latin America; all the world's continents are having to cope with it. Yet it seems to have got much more out of hand in some Latin American countries than in the rest of the world. If, during 1963, the cost of living were to rise by, say, 10 per cent in, say, Nigeria or Ceylon, one could not confidently predict that this would set off spiral processes which would raise the general price level in Nigeria or Ceylon by 30 per cent in three years. But it seems that one could safely predict such a result in some Latin American countries.

Some Latin American economists assert that this is because their people have acquired expectations of continuously rising living standards which make them more aggressive than the peoples of Asia or Africa. I do not believe this to be so; I do not think that Latin Americans are more anxious to have a rising standard of living than Nigerians or Ceylonese. What is different is expectations, not about the standard of living, but about how prices will behave. A Nigerian is used to seeing prices rise, and then fall again; in fact, if you ask a Nigerian farmer what is likely to happen to agricultural prices, he is even now more likely to predict that they will fall than to predict that they will rise. This is in sharp contrast to those Latin American countries where today no person under 40 years of age can remember any time when prices fell continuously over a period of two years. A country's expectations depend on its history, and the intensity of the spiral depends on its expectations. Prices rise much faster in Chile or Brazil than they do in Nigeria or Ceylon mainly because Chileans and Brazilians expect prices to rise much faster.

I think we are all agreed that this is a terrible state to be in, because this kind of inflation is quite pointless. One can argue for an inflation which sets out to achieve a deliberate purpose, such as to acquire more resources for a government which is engaged in military operations, or to bring about a change in the distribution of income such that proportionately more resources will be devoted to productive investment. I shall examine such inflations later in this paper. But the typical Latin American spiral has neither these purposes nor these effects. Once the whole community has been subjected to a high rate of inflation over long periods, nobody is caught by inflation any more. There are no unprotected contractual incomes any more; even Professors of Economics learn to keep up. So the spiral has all the usual evil effects of inflation without achieving anything useful. I think we are all agreed that, whatever may be the original fundamental causes which may start prices rising, the spiral itself adds nothing, and should be eliminated if this is at all possible.

Now in order to eliminate the spiral you have to get at its fundamental cause, and stop wages chasing prices. But you must also deal with its secondary contributor, the budgetary deficit.

A budget deficit is not a necessary part of a spiral, and does not, in fact, contribute to the spiral as it is experienced in the advanced industrial countries. In most of those countries, a rise in the general price level leads not to a budgetary deficit, but, on the contrary, to a budgetary surplus. This is because the marginal ratio of government receipts to national income exceeds the average ratio. These governments take 25 to 35 per cent of national income, but their marginal rates of direct taxation exceed 50 per cent, and many of their indirect taxes are well over 50 per cent. Hence, as national income increases, their revenues rise faster than their civilian expenditures.

Most underdeveloped countries are in the opposite situation. Their marginal tax rates are too low; too many taxes are fixed in money, instead of being on a proportionate basis; and prices of public utilities are slow to adjust. So a general increase in prices raises the government's costs faster than its revenues, and the resulting deficit makes the spiral worse than it would otherwise be. This seems to be of enormous importance in the bigger Latin American inflations. Without the budgetary deficit, the wage spiral by itself might raise prices by 5 or even 10 per cent per annum. Increases of 20 per cent per annum and more over long periods must mainly be due to the secondary contribution of the budgetary deficit.

To explain how the spiral can produce a budgetary deficit is not to explain why these large budgetary deficits are tolerated year after year. This seems to be a specifically Latin American phenomenon. Public opinion in India or Nigeria would be shocked by the idea of a large budget deficit every year, financed by creating new money, but public opinion in many Latin American countries seems to accept the right of the Government to print money as it likes. Here, again, these psychological differences must have largely historical explanations.

If the budgetary deficits were eliminated, prices would not rise so fast, but the wage price spiral could still be there, just as it exists in many of the advanced industrial countries which have no budget deficit. This problem cannot be solved without the consent of the trade unions. Monetary weapons are inappropriate. By reducing the quantity of money, one may stop prices from rising, at the expense of employment and growth, but this is not even certain, since the wage spiral may be continued even in face of much unemployment. The spiral may stop temporarily, but unless the consent of the trade unions has been gained, it is likely to start again as soon as the deflationary pressures are removed. A lasting solution requires trade union consent, which can be secured only on two conditions.

First, the cost of living must cease to rise, and stability of prices must be maintained for a period sufficiently long to convince

the unions that the Government means to control the cost of living, and has the means of doing so. At the technical level, this requires a combination of means: price controls; subsidies; use of foreign exchange reserves to bring in wage goods and dampen domestic prices; even perhaps an upward revaluation of the currency. But behind these technical means must lie the will to achieve price stabilisation.

The second condition for winning the confidence of the trade unions is political sympathy between the unions and the government, such that the unions are not striving all the time to embarrass the government by every means in their power. Such sympathy is found in many of the new nationalist states, such as India or Nigeria. The basis for this sympathy is a belief, on the part of the union leaders, that they and the Government leaders have pretty well the same objectives, and that these objectives are dominated by the interests of the common man. As far as one can gather, conditions for this sympathy do not exist in many Latin American countries. The reasons for this lie in political theory.

II

So far, I have really said nothing about the relationship between economic growth and inflation, since the spiral is not essentially a phenomenon of growth. The spiral is, in the last analysis, a political phenomenon, arising out of political tensions in society, and aggravated by poor fiscal policies. You could expect to find it in any economy, whether growing or stagnant. I began with the spiral in order to get it out of the way, since it seems largely irrelevant. If prices are increasing by 25 per cent or more every year over several decades, this is because the society is sick rather than because it is developing.

When we turn to examine the relationship between inflation and economic growth, the subject matter breaks into two parts: inflation as a by-product of growth, and inflation as an instrument of growth. We cannot, of course, entirely escape the spiral, since any inflation can set the spiral off. But it is important intellectually to distinguish between what sets the spiral off, and how the spiral itself works, especially since, with good management, one can have price increases associated with growth which nevertheless do not spiral, because the spiral itself is under control.

Economic growth will cause the general price level to rise through the effects of the expansion of some sectors of the economy on other less responsive sectors. The classical case is where extra income derives from an increase of exports. Part of the proceeds of these exports is spent on other sectors and, insofar as the output of these other sectors is inelastic and not completely substitutable by imports,

prices rise in these other sectors. Prices will rise if demand puts pressure on supplies, but prices may also rise sympathetically, without much pressure. In the classical case, the price of rubber or cocoa or some other primary product rises on world markets, and one follows through the effect on other prices in Malaya or Ghana, as the extra income of the farmers works its way through the system.

Let me take instead the case of Jamaica, where, in the newly opened bauxite industry, the trade union is extracting a wage of £8 per week for unskilled work, for which the normal Jamaican wage is £3 a week. This sets up two different strains. First, as the workers spend their extra incomes, they put pressure on the prices of wage goods. But, second, even if they consumed only imports and bought no domestically produced wage goods, there is a sympathetic upward movement of all other wages. If your cousin is getting £8 per week working in a bauxite mine, or reaping £8 per week because the price of rubber or cocoa has risen, you are no longer willing to accept £3 per week for working on the roads. The £8 a week serves as a challenge to all other unions to try to get increases in all other wages.

During this conference, we have heard a good deal about the direct pressure of demand on the output of stagnating sectors. But, I think that in practice the sympathetic upward movement of incomes is just as important a source of rising prices. We have heard a good deal also about the rising demand for food, but the pressure of demand may affect all domestic output, including manufactures, raw materials, and services, such as the price of haircuts. From the angle of the spiral, any price which enters into the cost of living matters, not excluding the price of haircuts.

However, let us concentrate on food. If the supply of food does not keep pace with growing demand, a brake will be put on growth, unless the country imports more food; in which case, it must either export more of something, or import less of something else. This is a very familiar idea -- so familiar, indeed, that it is puzzling to learn that this proposition now forms the basis of a new school of "structural" economics. The British economy met this problem head on as the economy developed in the 19th century. The solution was to increase Britain's propensity to export. Germany followed suit, and so did Japan. Other economies, faced with the same problem, have reduced their propensity to import -- the Soviet Union, India and Egypt are spectacular examples of import substitution. All these countries took this particular structural change in their stride. Why do we hear such pessimistic cries from those Latin American countries which now face the same problem?

Adjustment can be made either by increasing the propensity to export or by reducing the propensity to import. Particularly puzzling are those cries which seem to be founded on the belief that it is

particularly difficult to expand exports because the world is buying fewer and fewer exports. The opposite is true. World trade has never grown faster. Between 1950 and 1960, the quantum of world trade in primary products increased at an average rate of 6 per cent per annum, and the quantum of world trade in manufactures by more than 7 per cent per annum. The terms of trade for primary products could not retain the heights to which they were raised by the speculative fever of the Korean War period and the heavy American stock-piling in the early fifties; nevertheless the average terms of trade for the decade of the nineteen-fifties were better than for any previous decade in all the preceding hundred years. I do not know whether it is in fact true that, in the 1950's, Latin America had difficulty in keeping her exports growing at the same rate as national income; but, if this was so, it cannot possibly have been due to failure of world demand to grow adequately, since the quantum of world trade was growing by about 7 per cent per annum throughout the 1950's. Taking the continent as a whole, rather than individual countries, failure on this score can only have been, at least in part, a failure of effort.

Undoubtedly, success in achieving major sectoral change -- whether by a fall in the propensity to import, or an increase in the propensity to export, or agricultural reform -- creates pressures which will show up in rising prices. This is a temporary "growing pains" phenomenon, which should cease as the economic structure adjusts itself in the required direction, as the economy learns greater flexibility, and as increasing productivity takes effect on prices. One may note incidentally that this phenomenon is not confined to individual countries, but exists for the world economy as a whole. Looking back over the past ninety years for which we have figures, we can see that, whenever world manufacturing production has accelerated, or risen faster than 4 per cent per annum, both the money prices and the terms of trade of primary products entering into world trade have risen; and, whenever world manufacturing production has decelerated, prices have fallen. The world economy as a whole has the same difficulty with the inelasticity of primary production as have individual countries. But, the associated changes in prices are relatively moderate; big changes can occur only if the wage-price spiral is set in motion.

In practice, in an open economy which has its spiral under control, the cost of living is determined more by price movements in the international markets for primary commodities than by domestic pressures. Every country both imports and exports primary products, whose prices enter directly or indirectly into its cost of living, and most other prices seem to take their cue from these international prices. If wage costs get out of line with international price movements, there are repercussions on employment and on the balance of payments. Hence, most open economies pursue policies which are set, in the last analysis, by the direction of international commodity prices. Since the early

stages of growth involve some increase in domestic prices, it is easiest to keep an economy open if its period of growing pains coincides with a period of general upward movement in international commodity prices. One will find historically that periods when international commodity prices are rising secularly -- whether à la Kuznets or à la Kondratief -- are also the periods when development is occurring most widely over the whole world economy. If, by misfortune, a country's period of growing pains occurs during one of the periods when international commodity prices are moving downwards, it must look out for trouble in its balance of payments.

III

From price increases as a by-product of growth, I turn to consider inflation as a deliberate instrument of growth.

One may decide to open the monetary tap to promote growth in two situations: if the propensity to invest is too low; or, alternatively and paradoxically, if the propensity to save is too low.

In speaking of the propensity to invest being too low, one has in mind sluggish economies where investment is low not because of a shortage of saving potential, but because entrepreneurs are too easily satisfied. For example, it is said of British entrepreneurs that the proportion who will invest for the sake of innovation is too small, and the proportion who will invest only because demand presses on capacity is too large. By contrast, it is said that German or Japanese entrepreneurs are driven by a devil which makes them invest in any circumstance whatever. If people invest not primarily to innovate but primarily because demand presses upon capacity, then a policy of keeping demand and supply exactly equal results in low investment and slow growth. The remedy is to keep the tap slightly open -- just one or two per cent per annum. One does this not to increase profits, or to re-distribute income, but simply to keep order books slightly over-full. I think there is some evidence that Britain and France and the United States now fall into this category of needing just a little monetary stimulus if they are to keep at full stretch.

The case where the propensity to save is too low is very different. Here, the object of opening the monetary tap is to divert income from those who spend on consumption to those with a greater propensity to spend on long-term improvement. In the typical underdeveloped country, 80 per cent or more of gross national product is spent on personal consumption, and the remaining 20 per cent on capital formation and on public services, some of which -- such as education and health services -- may do as much for economic growth as is done by capital formation. Such a country needs to get the 80 per cent spent on personal consumption down to 70 per cent, and investment and public services together

up to 30 per cent of national income. When inflation is used for this purpose, it is only temporary; the object is to effect a permanent structural change in the distribution of income in favour of government and of savers. When this change is achieved, the inflation stops, and prices are stable at a higher level of growth. This kind of inflation is, therefore, self-liquidating.

Self-liquidating inflation is quite different from spiral inflation. Spiral inflation goes on forever, but self-liquidating inflation comes to a stop when the share of personal consumption has been reduced permanently to the new equilibrium level.

Large changes in the distribution of income, whether as between one class and another, or as between the public and the government, are not possible without inflation, if they are to be accomplished over a short period of time. This is the proposition which inflation theorists have invited the statisticians to test. Instead we are inundated with diagrams relating the rate of inflation to the rate of economic growth itself, instead of to the rate of increase of the rate of economic growth. Nobody argues that a high rate of growth must be associated with a high rate of inflation. On the one side, we know that spiral inflation does not cause growth; and, on the other side, we can have any rate of growth without inflation if the propensities to save and to pay taxes are already adjusted to that rate of growth. The proposition in which we are interested is that acceleration in the rate of growth causes inflation because the proportionate fall in consumption which this requires is resisted by the public, which thereupon manoeuvres to get higher money incomes. Will statisticians please note, and stop boring us with irrelevant comparisons between rates of inflation and growth in different countries?

Since the distinction between spiral inflation and self-liquidating inflation is so crucial, it is important to recognize the conditions which are necessary if inflation is to succeed in being self-liquidating.

The first condition is that it should result in an increase in the output of wage goods. You can get consumption down from 80 to 70 per cent of national output if, at the same time, the latter is rising in absolute terms, but not if it is falling in absolute terms, because the public will always fight to maintain the absolute level of its living standards. The corollary of this is that the purpose of the inflation must be to secure resources for investment in productive enterprises which yield a quick increase in the output of wage goods. Consumers then get something, and if their standard of living is rising absolutely, they are not so concerned about the fact that it is not rising as fast as productivity. However, a rapid increase in the output of wage goods itself requires certain favourable factors: there must be natural resources capable of quick development; there must be enough foreign

exchange to spare for importing equipment, and enough skilled labour to get on with the job. Giving the Government money to spend does not necessarily result in increased output.

The second condition for success is that the inflation should redistribute income to the right people. Insofar as the purpose is to increase the Government's share, this is relatively easy; one sets the marginal rates of taxation well above the average rates, so that Government revenues automatically increase faster than incomes. A shift towards industrial profits is not so easy because, in economies dominated by cost accountants, industrial prices tend to be fixed on a cost-plus basis, which keeps gross profit a constant proportion of industrial prices. If left to themselves, farm prices will rise as fast as other prices, so that growth of farmers' incomes can be restrained only by special measures, such as price controls, or using some foreign exchange to subject farm prices to international competition. The most likely result of inflation is to shift income from the non-unionized classes to "get-rich-quick" types of capitalists in retail or wholesale trade, and it is by no means certain that these will use their profits for productive investment. Inflation equilibrates most satisfactorily when its purpose is to increase the share of the Government in national income, or when it originates -- in Schumpeter style -- with entrepreneurs (whether private or public) actually increasing the amount of resources used in productive investment, and so forcing the economy to accept a shift towards profits used productively.

The third and final condition for success is command over the loopholes: over the foreign exchanges, over flight of capital, over luxury consumption, luxury building, and such. But, all this goes without saying if we are talking about successful inflations.

The size of the inflation depends on how big a porportionate change one is trying to achieve, and how soon. If the annual rate of change is large, the annual rate of inflation will also be large, and prices must rise, say, threefold to fivefold in ten years. A big inflation cannot go on for long without turning into spiral inflation, because in a big inflation everybody soon gets the point, and learns to protect himself by demanding higher money income. In this sense, by having prolonged large spiral inflations, which have achieved nothing, Latin America has already wasted her inflationary potential, and barred herself from turning now to useful self-liquidating inflations. If one takes a longer period in which to achieve the proportionate fall in consumption, one can get the same result with much smaller increases in prices. If, for example, the share of consumption falls each year by only one-half of one per cent of national income, while in absolute terms per capita consumption continues to rise by one per cent per annum, some sluggish classes of the community will never get around even to trying to protect their position, and this, with the unsuccessful attempts of some others, will keep the rise of money incomes low.

For examples of self-liquidating inflation we must look, not at what is happening in Latin America today, but to other parts of the world where the gap between output and consumption has actually been widened. I think the statisticians will find, once they stop chasing hares and come to the real point, that virtually all "take-off" periods -- which by definition are short periods of rapid acceleration of the rate of growth -- have been periods of self-liquidating inflation. The so-called Lewis model was constructed to show how the share of profits and saving in national income can rise over a long period without inflation. But, in practice, there is usually a period when change is fairly swift.

Since any rapid increase in prices is a pretty horrible process, one must also ask whether the same results cannot be achieved less painfully. Rapid growth can, of course, be achieved without this process if it is helped by large inflows of foreign capital, as for example, in Puerto Rico or in Northern Rhodesia. But, this is beside the point, partly because there isn't all that foreign capital to go around, and partly because our question is whether a rapid increase can be financed domestically, by widening the gap between output and consumption, without getting involved in inflation.

I think the answer must be negative. It is fashionable to say that the gap can be widened by sharp increases in taxation, and to put forward such increases as an alternative to inflation, but this is misleading if it is exaggerated. A large increase in taxation is bound to be inflationary if its purpose is to reduce mass consumption, because people will always try to get their incomes raised when their purchasing power is reduced, whether by taxation or in some other way. Taxes which fall on savings will not have this effect, but they are irrelevant to our present purpose, which is to reduce the share of consumption in national income. Taxes which fall squarely on the consumption of the rich, such as the great landowners, may also be non-inflationary, and there is much scope for such taxes in Latin America. A drastic reduction in consumption cannot, however, take place only at the expense of the rich, because there are not enough rich. So far as I know, all attempts in recent years to effect a drastic reduction in consumption by means of taxes have been followed by industrial strife, even to the point of riot and bloodshed. Whether one proceeds via taxation or via turning on the monetary tap, attempts to reduce sharply the share of consumption in the national income will always be inflationary.

For my part, I do not believe that any country is wise to try for a sharp and swift reduction in the proportionate share of consumption, whether by taxation or otherwise, because I believe that a big inflation is a horrible experience, and is too heavy a price to pay for achieving in five to ten years changes which could be achieved in

fifteen to twenty years with only a moderate increase in prices. I believe that there should be a steady fall in the share of consumption, but that this should be within the limits set by the need to increase real per capita consumption all the time, and should therefore not much exceed a relative fall of one-half of one per cent of national income per year. Thus, taxes and savings taken together should not rise in real terms faster than about 6 per cent per annum, when national income is rising by 3 or 4 per cent.

This, however, is a very personal judgment, based on my belief that civilization is pretty fragile, and that if it gets torn apart in violent social conflict, it is hard to put together again. I do not want to force on the man in the street economic progress at a rate faster than he is willing to bear, defining this rate, not in terms of individual savings, as the laissez faire economists do, but in terms of the rate of change which the man in the street finds politically tolerable.

SUGGESTIONS FOR THE DEVELOPMENT OF A CAPITAL MARKET IN TURKEY

Ibrahim Öngüt

[From a paper prepared for the Conference on Problems of Economic Development and the Lessons of Turkish Experience, Istanbul, Turkey, August 1962. To be published in Problems of Capital Formation and Investment in Industry; Istanbul, Economic and Social Studies Conference Board, 1963, approximately 400 pp.]

[In August 1962, the Economic and Social Studies Conference Board of Turkey sponsored in Istanbul, Turkey, the first of three annual conferences on economic development and the lessons of Turkish experience. The Board is a private nonprofit organization in Turkey which carries on research, meetings and publication on economic, social and cultural subjects. It is composed of Turkish citizens from business, government, education and public affairs, and its conferences and seminars are also attended by a small number of foreign experts. Local contributions, supplemented by a matching grant from the Ford Foundation, are enabling the Board to hold annual conferences in 1962, 1963 and 1964 on the problems of economic development and the lessons of Turkish experience.

In addition to Turkish officials and economists, the 1962 Conference was attended by development specialists from Western Europe, the United States, and Middle Eastern and Asian countries. Both the Turkish and the foreign experts prepared papers on various aspects of the three conference subjects -- domestic sources of

Excerpts from the paper begin on the next page.

Ibrahim Öngüt is Economic Adviser, Industrial Development Bank of Turkey.

capital and manpower in industrialization; foreign assistance and industrialization; and economic planning and capital investment. Particular attention was devoted to the Turkish experience in these fields, though the work of other countries was also discussed. The papers are being published by the Board under the title cited above.

Among the papers presented was that of Ibrahim Ongüt on the "Development of a Capital Market in Turkey." The excerpts presented here consist of those portions of the paper which may be applicable to other less developed countries.]

The problem of the development of an effective capital market will be treated in this paper as an aspect of the general problem of mobilizing savings in an underdeveloped country. I shall be concerned primarily with the situation in Turkey which, however, is not unlike that of many other underdeveloped countries.

By an effective capital market, I mean an institutional framework through which private voluntary savings are channelled into productive investments. More specifically, I mean a securities market where savings are converted into bonds and equities and where such assets can readily be converted into cash. In Turkey, the instruments and agencies of the capital market exist. We have a stock exchange; but the volume of transactions is very low, confined mostly to the shares of a few financial institutions. We have corporations; but few are publicly owned, and the family firm is the most prominent form of corporate enterprise.

This is not a very surprising thing for an underdeveloped economy. The capital market comes into being at a certain stage of economic development. In Europe, capital markets and their institutions developed gradually during and after the industrial revolution under economic and social conditions which encouraged a fast accumulation of private capital.

Conditions in underdeveloped countries today are quite different from those of nineteenth century Europe. Population pressure, for one thing, effectively limits the rate of capital accumulation. Speedy development of the means of communication and contact with the rich nations create a pressure for a rapid increase in consumption standards, while greater demand for social justice and for a fair distribution of income acts as a brake on accumulation. In economic terms, not only is the marginal saving ratio low but there is a continuous pressure for an upward shift in the consumption function.

Under these conditions, many underdeveloped countries rely on forced savings rather than voluntary savings as a means to increase the rate of investment. In other words, the saving potential of these countries is mobilized by the state to a greater extent than during the early industrialization of the advanced countries. As a matter of fact, inflation -- which is a form of forced savings -- has figured large in the recent histories of many newly developing nations.

Today in many underdeveloped countries, including Turkey, policies to mobilize savings are formulated within the framework of long-term development plans which aim at enhancing savings through a judicious combination of taxation and measures to promote voluntary saving and private investment. The problem of reaching an optimum investment rate in a mixed economy is a complex one. Increased taxation, for example, may diminish voluntary savings and investment incentives, or tax concessions designed to increase private investment may result in a loss of revenue to the government greater than the increase in private investments induced by such concessions. In both cases, total saving and investment may be diminished. I am mentioning this problem because it has a bearing on the problem of the development of a capital market. Measures to stimulate a capital market must be coordinated with other economic measures in such a fashion as to form part of a concerted policy dictated by the broad objectives of the development plan.

In an underdeveloped country, the volume of private voluntary savings is low and is not likely to increase significantly by creating the institutions of the capital market or by introducing new saving media. Saving is a function of income and even if the new saving media provides better investment opportunities, it is unlikely that savings at given income levels will show a significant increase. However, a higher proportion of savings may be channelled into more productive uses. In many underdeveloped countries, the percentage of savings which can be redirected into industrial investments may be quite large. Therefore, the prime objective in developing a capital market is to create the means and to provide the incentives for the investment of savings in new ways, so that a larger volume of voluntary savings is placed at the disposal of entrepreneurs willing to invest in new ventures or expand existing enterprises.

One of the most important factors which have slowed down the process of the development of a capital market in Turkey has been lack of confidence in the promoters, managers and financial statements of corporations. Until such confidence is established, people will only invest in enterprises which are run under their own supervision and control. The development of the capital market implies the separation of the functions of ownership and management of capital, and the emergence of a class of able, enlightened, anonymous business managers. This

requires not only education and training but also a change in the basic attitudes and outlook of the businessmen. Measures such as the establishment of a system of public accountants or chartered accountants are, of course, essential if the securities of corporations are to enjoy the full confidence of the investing public. However, control mechanisms are not sufficient to establish public confidence in corporate enterprises. Public confidence will be gained only gradually by positive action from promoters, managers and businessmen who have controlling interests in corporate enterprises.

The second important factor slowing the process of the development of a capital market in Turkey is the desire for liquidity on the part of the investing public. Here, there is a vicious circle in the sense that, unless there is a market where the capital invested in shares can readily be turned into cash, the public will not invest in shares. Yet the existence of such a market requires wide-scale investment in such assets. Although this is a serious obstacle to the birth of a capital market, once a mechanism is established whereby investors are assured of a ready buyer, the market will develop itself rapidly. In other words, there is a need for a mechanism which will induce the public to invest in shares by assuring their liquidity. How we could create a mechanism which will break the vicious circle will be discussed later.

So far we have discussed the problem from the point of view of supply -- supply of funds to the capital market. The demand side of the picture, however, is just as important. Demand for capital means supply of securities. This implies the existence of corporations willing to raise capital on the market, which in turn implies willingness on the part of entrepreneurs to accept anonymous shareholders as partners. This we cannot take for granted in Turkey. There is a strong reluctance among Turkish industrialists to renounce or dilute control and give a voice to outsiders in decision making and management. Furthermore, inflationary experience in Turkey has conditioned entrepreneurs in favour of being debtors.

I will not attempt to discuss legal problems in detail. Any legal obstacles which slow down the development of the capital market should, of course, be removed. In Turkey, complicated formalities delay and discourage the formation of corporations and increases in their capital. These formalities have to be simplified. Legal problems relating to the issue of new types of securities, such as convertible bonds, should be studied. The law should give adequate protection to the interests of minority stockholders. Transactions and operations of the stock exchange must be regulated by law and controlled by an official agency to minimize speculative activity and manipulation of stock prices.

The institutions of the capital market are varied. Brokers, underwriters, banks, consultant firms, management and investment trusts, all have specific functions which form part of the complicated machinery of the capital market. In underdeveloped countries, there is not adequate demand for the services of all of these specialized agencies and some of their functions may be combined under one organization. This usually is the development bank.

For example, underwriting firms perform an important marketing function by underwriting issues of new securities and placing them with the public. However, where there is no organized capital market and financial intermediaries, the underwriting firm has no guarantee of disposing of the full amount of the issues they underwrite. Therefore, this function has to be undertaken by an agency which is prepared to hold the full amount of the issues they underwrite in case they cannot be sold to the public. This means that the underwriting function has to be combined with the investment function. A development bank can do this.

Development banks are in a strategic position with regard to the capital market in underdeveloped countries in the sense that some of the functions of specialized agencies of the capital market may be combined with the finance function of development banks. Development banks are also in a strategic position with regard to the placement of securities because they inspire confidence in investors. The investing public usually has no means of evaluating the soundness or profitability of new enterprises. The bank's sponsorship of new enterprises will lower investor resistance to commit funds to new ventures.

The most obvious way in which development banks can assist in the development of the capital market is by forming a portfolio of investments from the enterprises they finance. This portfolio may then be placed with the public. Industrialists, however, are reluctant to sell part of their stock, especially when they know that the bank will then turn them over to the public. The development bank may make this a condition of its financing. Such a policy, if actively pursued, would substantially contribute to the broadening of the equity market.

We have already observed that one of the most serious obstacles to the development of the capital market is the emphasis placed on liquidity by the investing public. There is need to create a mechanism which would perform the function of providing liquidity to the investor until the capital market is sufficiently developed to provide it itself. This mechanism may take the form of a special fund provided by the state and administered by the development bank to be used for the repurchase of stock sold by the bank when presented by their holders. In

other words, the bank would always stand ready to buy back the shares it has sold to the public at issue price. Such a mechanism, I believe, will substantially lower investor resistance to commit funds to industrial enterprises out of fear of illiquidity.

The bank, of course, runs a risk in this operation. The value of the stock may depreciate as a result of failure on the part of the firm to distribute dividends. Such risks, however, are not any different from the risks a development bank runs when it invests in an enterprise and keeps the stock in its portfolio. A development bank with a technical staff competent in evaluating investment projects should be able to operate indefinitely with such a fund, making up any losses that may normally arise from a commission fee it would charge in its purchase and sale operations.

Another possibility open to a development bank is to sell shares with a minimum dividend guarantee. However, the bank's promise of repurchase at the issue price is no different from a dividend guarantee in the sense that it eliminates the risk of loss for the investor. The repurchase guarantee has the additional advantage of providing liquidity at the same time. The nature of the risk run by the bank is the same in both cases.

I may now turn to the problem of tax incentives. The tax incentives I have in mind are those which might make investment in securities more attractive compared with alternative forms of investment.

In the Turkish income tax system, all incomes are taxed at the same rates regardless of their source. There is no differentiation between earned and unearned income. However, there are certain exemptions for incomes from immovable assets and interest on bank deposits. There are no exemptions for income from bonds and shares. The tax system, therefore, discourages the investment of small savings in securities and encourages bank deposits and investment in immovable assets.

An extreme way of encouraging investment in stocks and bonds would be to exempt from tax all income from securities. This, however, would result in a large loss of revenue to the government and benefit primarily the owners of existing restricted family corporations. Our primary objective in the developing of a capital market is to mobilize small savings. Therefore, an exemption of 5,000 liras [$400] of income -- which, if we take the average rate of return on shares as 10%, would mean an investment of 50,000 liras [$4,000] -- would give adequate incentive to place small investors in securities.

There might be other ways to stimulate the development of the capital market. I have tried to indicate the nature of the economic problems and the obstacles to be removed to speed up this process. Economic research on this subject would give us much valuable information which would be useful in designing policies for future action. To speed up the development of the capital market in an underdeveloped country is no easy task and requires ingenuity as well as a concerted effort on the part of entrepreneurs, managers, financial institutions, and the government agencies responsible for formulating and carrying out the policies for economic development.

[Capital Formation and Investment in Industry has been copyrighted by the Economic and Social Studies Conference Board, Istanbul, Turkey, and will be published by the Board in April 1963. The above material may be freely reproduced, provided credit is given to the author, the book, and the publisher. Capital Formation and Investment in Industry may be ordered from the Economic and Social Studies Conference Board at Beyoğlu, Imam Sokak No. 5, KAT 3, Istanbul, Turkey. The price is expected to be US$5.00.]

INDUSTRIALIZATION

ECONOMIC REQUIREMENTS OF MODERN INDUSTRIALIZATION

Simon Kuznets

[From Transactions of the Fifth World Congress of Sociology; Louvain, International Sociological Association, 1962, Volume II, pp. 73-90.]

[This paper identifies the main economic requirements for industrialization and discusses some of their implications. In many ways, it parallels another paper by Dr. Kuznets on the economics of agriculture and its relationship to development which was published in the International Journal of Agrarian Affairs (Vol. III, No. 2, April 1961, pp. 56-75; London, Oxford University Press). The present paper was prepared for the Fifth World Congress of Sociology of the International Sociological Association, held in Washington, D. C., in September 1962. The complete paper appears in Volume II of the Transactions of the Congress, dealing with various aspects of the sociology of development.

Excerpts from the article begin on the next page.

The International Sociological Association (ISA) was founded a dozen years ago under the auspices of UNESCO, to fill the need for a world-wide professional society in the field of sociology. It is composed of national associations or societies, and accepts

Simon Kuznets is Professor of Economics at Harvard University. He is world-famous for his studies and measurements of the process of economic growth.

individual members only from countries which have no professional sociological organizations. The aims of the ISA are to promote sociological research, develop personal contacts among sociologists from different nations, and ensure the exchange of sociological information. The ISA has held world congresses every three years since 1950. Inquiries regarding the ISA should be addressed to: The Secretary General: Professor Pierre de Bie, International Sociological Association, 116, rue des Flamands, Louvain, Belgium.]

I

A country's or region's industrialization may be formally defined as a sustained rise in the share of total product originating, or of total labor force and material capital employed in, industry. And industry is a complex of commodity-producing activities primarily engaged in fabrication, in changing the shape of commodities rather than in growing them or extracting them from water or ground. The industry sector is not a standard group in a comprehensive classification, but usually includes power production, manufacturing, and construction, although in some countries, it also includes fisheries, forestry, and mining; and for some purposes commodity transportation may be added.

In the purely formal sense of an increase in the share of industry in product, labor force, and capital, industrialization is an old process going back to the urban revolution that preceded recorded history. But we are concerned here with the economic requirements of modern industrialization -- that observed since the late 18th century, most clearly in countries that are now considered economically developed, but also present in varying degree in all but the few countries in the world still untouched by modern technology. It is, therefore, important to point out some distinctive features of modern industrialization for they affect the magnitude, if not the nature, of the relevant economic requirements.

Modern industrialization is the product of modern technology and science, a reflection of the marked additions to the stock of useful knowledge -- useful because it relates to properties of the universe in which we live and hence to possible controls over these properties designed for a richer and easier life.

As a result of this technological advance, modern industrialization has developed two distinctive characteristics. First, the increasing use of mechanized power, the greater control over materials, and the greater articulation of the underlying basic knowledge, made for greater economies of scale, and for an optimum size of industrial plants far larger than that of pre-modern times.

Second, the growing control over natural processes that the expanding use of science and science-based technology permitted, accelerated economic growth, as is evident from rates of increase in population and per capita product far higher than those which prevailed in the past. Thus, with modern industrialization, industry represented increasing shares in rapidly rising total product, labor force, and capital, and the rates of growth of industrial output, labor, and capital were high indeed. Furthermore, to achieve this rapid growth, the industrial sector had to adjust to a per capita income that was climbing rapidly and that produced changes in the structure of ultimate use and consumption. In other words, a second distinctive characteristic of modern industrialization is the combination of a high over-all rate of growth of industry with rapid structural shifts, i.e., changes in relative importance, and hence different rates of growth, of its component industries. These rapid structural shifts were in response not only to the differential impact of technical progress but also to the changing structure of ultimate consumption reflecting the over-all rise in product per capita.

II

The following complex of economic requirements of modern industrialization may be singled out for consideration: (1) a minimum level of efficiency in some major sectors of the economy, other than industry itself; (2) a supply of labor and capital suitable for modern industry; (3) adequate demand for the products of industry; (4) a supply of entrepreneurial talent capable of decisions on labor and capital involved both in modern industry and in the other requirements for it, and of innovations necessary within the changing framework of an industrializing country.

1. Unless other major sectors of the economy attain some minimum level of productivity per worker (or per unit of input), resources for modern industry itself might prove fatally scarce. This applies particularly to agriculture and to transport in the early phases of a country's industrialization, for partly similar but somewhat different reasons.

Agriculture (excluding or including related industries such as fisheries and forestry) provides goods of prime necessity; and in premodern societies by far the larger portion of the labor force (up to 80 percent) and of tangible capital resources are employed in agriculture. For a closed economy, this means that most of the labor force is committed to providing the foods and raw materials necessary not only for themselves and their families but also for the remaining small percentage of labor force and population. Unless somehow a smaller proportion of the total labor force (and of capital) can produce the same amount of food and raw materials, and thus release a larger share for other uses -- industry among them -- industrialization, in the sense of a significant rise in the share of labor force and capital devoted to industry, cannot take place.

The other sector in the economy whose efficiency is crucial to the development of modern industry is transport and communication, including some related branches (warehousing and the like), closely involved in the large-scale character of modern industry. A large-scale plant, such as a steel mill or even a cotton textile mill, cannot operate effectively unless the flows of materials to it and of products from it are continuous and geared to permit operation of the plant at sufficiently high levels of capacity, impeded neither by shortages of raw materials nor by glut of finished products. If the transportation and communication services involved in such flows can be met only at a heavy outlay of labor and capital, much or all of the economy of modern industry to society would be lost.

2. If we assume adequate efficiency in agriculture, as the sustaining sector, and in transportation and other complementary sectors, labor and capital resources in the country would presumably be sufficient to raise the share of modern industry in total resources used and in total product turned out. But, the amounts of labor and capital available for modern industry are not all-important; modern industry requires specific types of labor and capital equipment. In other words, in addition to purely aggregative requirements for labor and capital, modern industry has qualitative or structural requirements.

To begin with labor, modern industry -- with its increased reliance on science-oriented technology -- requires a group of trained professional people capable of understanding and controlling the complicated bases of modern technology. In particular, it should be emphasized that even in the countries that follow the industrialization patterns of the pioneer -- and most countries are followers after one pioneer -- the professional industrial personnel is needed not merely for simple application of the techniques established elsewhere. The existing technology usually must be adapted to the specific conditions and resource endowments of the less developed, borrowing country, and needs to be supplemented by new inventions and devices, designed to optimize its contribution to the modern industry within the given country. The professional and highly skilled groups are, to be sure, relatively small; but the training and education of such technically qualified personnel are demanding of time and resources. Moreover, the "production" of this selected group is partly contingent on a system of widespread education and training that serves as a means of selecting those best fitted for the more difficult tasks of modern technology.

If only for this reason, the specific requirements for the qualified top industrial personnel affect a much wider group of people. But, furthermore, requirements of modern industry affect directly also the masses of workers employed in it. They all participate in an activity that involves cooperation with large and diverse groups of co-workers and the use of elaborate equipment that must be properly controlled;

and most of these workers are required to be regular and prompt in attendance, capable of understanding and following specific instructions, and willing to cooperate. It is the kind of discipline for which life in the countryside or in family shops does not prepare people; and, whatever one may think of its consonance with human nature, if suitable labor cadres are to be provided for modern industry, a substantial economic and social investment must be made in developing such a labor force.

Similarly, specific requirements apply to the capital resources for modern industry. Such capital is not merely so many units of resources withdrawn from current consumption, so many dead labor hours embodied in any commodity. It is rather specific kinds of machinery and construction embodying the ever-growing technological knowledge and power. While there may be some choice of technology, modern industry needs more than hand tools; and the necessity to borrow and learn from the advanced countries of the day limits the choice within any given industry.

To satisfy these specific requirements for labor and capital for modern industry (and other modern sectors in the economy), a less developed industrializing country can import them if it enjoys a capacity to export. This means that its savings must assume the form in which existing export demand permits conversion into the capital goods (material or education) that must be imported. While, to some extent, the burden of securing an export surplus and export markets may be eased by unrequited capital imports [i.e., foreign aid] the relief can be only partial. Another alternative is to select types of capital investment, and thus the type of industry, that can be more easily produced at home. But, this may mean foregoing the more advanced and more productive types of modern industry. A third alternative -- and the most costly -- is to build within the country as quickly as possible as much as possible of the necessary capital equipment (to produce other capital goods, material or education).

3. If the specific labor and capital resources needed for modern industry can be secured, the next requirement, in logical order, is the assurance of demand for the products of modern industry. This demand may be from abroad, although if we deal with the less developed, follower countries, a modern industry can hardly be built on the expectation of gaining a firm foothold in foreign markets that have already been developed and occupied by the earlier pioneer countries. The question then is primarily of domestic markets, although the foreign market potentials were an important factor in the expansion of modern industry in the first pioneer countries.

With respect to domestic demand, we should distinguish the scale of preference from the capacity to effectuate it. Demand for the

products of modern industry is effective only if it is backed by purchasing power, present or to be secured in the future. But, in a sense, we have already dealt with the question of effective purchasing power in our discussion of the efficiency of agriculture; a high level of productivity in agriculture was assumed because it meant that resources could be spared for industry, to be paid for from the surplus of agriculture; and this meant also the power to pay for the modern industry's products. In so far as the value of these products roughly equals the value of the resources put into industry, the power to sustain the latter within the country is ipso facto power to purchase the products. The question then really is one of the scale of preference -- whether the people in the country would use their economic power to purchase the products of modern industry, thus justifying a continued and sustained input of resources into the latter.

Despite the extensive discussion of the eagerness of the less developed countries for modern industry, international demonstration effect, and the like, we raise this question of the scale of preference. The eagerness referred to above is the result of a penetration that modern economic life has already made into the less developed areas; it is the result of prolonged exposure; and the desire to build modern industry within the country is thus in the nature of import-substitution rather than new product introduction.

If the demand for modern consumer goods is built up only by dint of prolonged contact with more advanced economies, that for modern capital goods is further contingent upon the time horizon of the would-be purchaser or user. Modern capital goods most often represent large bundles of resources with relatively long life, and are economical only when continuous use over a long period can be assured. In many less developed countries, the very onset of industrialization introduces changes and uncertainties that make commitments to long-term investments far from easy, given the variety of shorter-term opportunities for profits. It is, therefore, not unusual for the essential demand for capital goods products of modern industry to be satisfied by government intervention. Even in those less developed countries that are anxious to protect the freedom of individuals from encroachment by an economically powerful government, the latter assumes control over the domestic production of basic capital goods (including basic industrial materials), accepting the risk of inadequate demand that is not shouldered by the private sector, and assuring the domestic availability of modern capital goods even if private internal resources may be sufficient for the purpose.

One final aspect of the demand problem should be noted. The size of the domestic market for the products of industry may limit the scale of plant that can be maintained. If the country is small, some modern industries, with large-scale optimum plants, may not be economically

feasible, unless the country possesses such distinct comparative advantage as to be assured of substantial foreign markets. For reasons of national security and pride, plants and industries may be established within a country despite an insufficient market for them; but these are non-economic. By and large, the smaller countries do not possess the large-scale industries which require large markets for support -- unless, again, they have some specific comparative advantage (in the way of raw materials, labor, or location). Thus, in the requirement of adequate demand for products of modern industry, the size of a country is an important selective and limiting factor; and as the number of modern industries with large-scale optimum plants increases, the range of modern industries that are not economically feasible for most small countries widens. This may have been one factor that accelerated the trend among the advanced countries of Europe toward common market alliances.

4. Given the resources for modern industry, afforded by a minimum level of efficiency in agriculture, transportation, and other sectors of the economy; the possibility of converting them to the specific forms of labor and capital suitable for modern industry; and the existence of adequate domestic and foreign markets for the products of such industry, there is need for a group of entrepreneurs to assemble the productive factors and organize them into relatively efficient enterprises. We cite entrepreneurial capacity as a distinct requirement of modern industry because the availability of resources, the technological feasibility of modern industry, and the market for its products, all in a given country, exist only as it were in potentia unless a group of entrepreneurs is available with the capacity to resolve the specific problems that arise in converting that potential into concrete reality. Someone must assemble the resources for an efficient modern plant, develop the plant to levels of adequate performance, and tap the markets that provide the final proof of the economic viability of the enterprise.

Whether by its existence, the potential of modern industry described in the three groups of requirements above would automatically bring forth the necessary entrepreneurial talent is a question to which I can give no firm answer. It may well be that in every society there is a pool of such talent, and given the other requirements, the supply of entrepreneurs will be waiting to be tapped. But to accept this thesis may mean an unwarranted simplification of the problem. Even if one assumes that able entrepreneurship is genetically widespread through the population and a sizeable amount of such talent is assured, will it be channeled into the economic rather than the political or military field? And even if it is directed to the economic field, will it be employed in modern industry (or in the other modern sectors needed to sustain and complement modern industry), or in real estate speculation or exploitation of small-scale peasantry?

The scale of values of a society and the priority it assigns to economic achievement obviously determine whether the human talent capable of innovational decisions would flow into economic human endeavor, and whether it would apply the rules of rational economic behavior if so engaged. Much of the literature on policies aimed at stimulating economic growth deals with modifications in institutional arrangements to direct flows of resources and entrepreneurship into channels that would maximize economic growth. And, there is the obvious interplay between the requirement of entrepreneurship and the degree to which the other requirements have been satisfied: with limited surplus in other sectors, an inadequately trained labor force, complex capital equipment, and the risk of poorly developed markets, the obstacles that the entrepreneur has to overcome are greater and the human talent capable of doing so, scarcer.

The kernel of the requirement is that there be a group of people deeply concerned with modern industry and so placed within society that they have the power to act on their concern. Both recent developments and a longer history of modern economic growth demonstrate that such functions have been performed not only by private entrepreneurs in search of profit but also by the public, governmental entrepreneur, in search of economic growth for the country at large. In the free economies, this means a complementary relation between the two groups of entrepreneurs, the public clearing the way for undertaking the more difficult tasks which the private entrepreneur cannot shoulder. In the authoritarian economies, it means the substitution of the public entrepreneur for the private, a highly centralized operation whose success is measured largely by the consonance of its results with the planned goals of a political minority controlling the state apparatus. In the free economies, subject to constraints imposed by the state under pressure of different groups in the society, the decentralized activity of the private entrepreneurs is tested largely through the decisions of the thousands of units who express their preferences in the markets. Modern industry developed under these different types of entrepreneurship has some common characteristics because modern technology is the same the world over and because, for example, steel mills are essential to produce other steel mills, or heavy machinery, or consumer goods. However, the structure of industry differs under the two types -- in its distribution between producer and consumer goods, in its relation to other sectors in the economy (e.g., to the lagging agriculture in the authoritarian countries), and in the very scale of its organization.

III

It would have been extremely difficult to distill from the extensive literature [on industrialization] a set of specific formulations of economic requirements of modern industrialization to substitute for the general discussion above; and the latter approach obviated the use

of extensive references for notions that are rather common in the literature. Firmly established findings, both empirical and analytical, are still far too few relative to the variety of modern economic growth already experienced, let alone the possible variants in the proximate future. For this reason, any attempt to specify precisely the economic requirements, to assign to them some quantitative coefficients, and to spell out their most important corollaries, would mean a wide range of alternative answers, the explanation of which would far transcend the limits of this paper. In particular, such an approach would reveal some problematical aspects of economic requirements. It is, perhaps, fitting to conclude this paper by commenting briefly on these aspects.

First, these requirements cannot be conceived as a unique combination, which, if present, will assure a sustained process of modern industrialization. At the same early phase of industrialization in two countries, the requirements might assume different quantitative dimensions and ranges, depending upon conditions not only in the countries themselves but also in the rest of the world and depending also upon the time of occurrence, since it would be related to the stage in development of science and technology. One and the same set of domestic conditions may mean different levels of satisfaction of requirements, depending upon the historical time and the level of development in the rest of the world. At a later phase of modern industrialization in the two countries, requirements for further industrialization would again be different -- with respect to the volumes and even the structural characteristics of labor, capital, and entrepreneurial ability involved. In this connection, our earlier reference to the rapid changes in the structure of modern industry must be recalled -- for such structural changes are likely to mean corresponding changes in requirements for further growth. In short, the economic requirements of modern industrialization change over time, with the phase of growth of modern industry in a given country, with differing conditions in the rest of the world, and with the changing world-wide potential of modern technology. Thus, any further attempt at specificity in formulating economic requirements would show that they differ in magnitude and in structure from country to country, from phase to phase, and from time to time.

Second, the distinct economic requirements are partly substitutable for each other at a given point of time, or in the sense that the stimulus provided by one might, if followed, bring another into being after some limited period. Thus, a wealth of resources, convertible into productive factors for modern industry, may substitute for that scarce entrepreneurial talent which would be needed to cope with a smaller amount of resources. Also, if resources and entrepreneurial ability for modern industry are at hand, and modern plants are set up despite uncertain demand, that demand might develop as ultimate consumers become acquainted with the products and change their scale of preference for them. Thus, given this "creative" interrelation among requirements, all of them do

not have to be satisfied at the same time; but only enough of some to form the basis for an entrepreneurial venture that might eventually call forth the latent but missing requirements. Indeed, this interplay between requirements and actual growth, in which growth strengthens some of the bases of its own progress, is one of the mechanisms of economic growth. A surplus of resources in a tolerably efficient agriculture, if used in modern industry, would improve the efficiency of agriculture and thus provide additional resources for further expansion of industry.

Third, given the changeability and dynamic character of economic requirements, we must emphasize that modern industrialization can be assigned different magnitudes; and requirements would differ for different levels of modern industrialization. The potential of modern industrialization, in the sense of economic growth permitted by the progress of modern technology under the most favorable economic and social conditions, is always large; and probably no country exploits it fully. On the other hand, few if any countries in the world are so completely bereft of domestic resources convertible to modern industrialization and have a scale of preference so opposed to modern products that they lack completely the economic requirements, for, and cannot effect some, industrialization. But some modern industrialization may not be sufficient to raise per capita income and increase the diversity of economic product -- two prerequisites of minimum adequate economic levels. It is the question of the magnitude of industrialization that lends importance to much of the work on empirical coefficients and policy problems. The latter broadens our understanding and analysis of the links between specific magnitudes of economic growth and economic requirements and the characteristics of the policy steps relating to them.

Finally, economic requirements are never purely economic; they are always formulated within a wider social framework, just as the very potential of modern industrialization rests on the growing stock of useful knowledge that is the product of the humanistic search for knowledge. Such notions as minimum efficiency in agriculture, or demand for products of industry, or channeling of entrepreneurial talent into modern industry, are full of implications concerning the political and social aspects of the economy. The economic aspect of human activities emerges when men deal with scarce resources for the satisfaction of wants, largely via the market place. But their pattern of behavior even in this sphere and the process by which that pattern is formed depend upon other social institutions as well as upon the play of the human mind in science and invention.

The "economic rationality" of economic agents lies within a broader context which limits it to some specified means, and prescribes some specified ends. If there is a hard core of meaning in the economic requirements of modern industrialization, it is there because we assume

some broader social framework within which such requirements are formulated and from which many contingencies are excluded (e.g., slavery or genocide as ways of securing resources; or religious asceticism as a way of curbing ultimate consumption). Only by the direct consideration of the non-economic requirements of modern industrialization can the framework within which the economic requirements are formulated be elucidated.

The above material is copyrighted and may be freely reproduced only in the less developed countries. A complete credit citation must accompany each reproduction as follows:

From "Economic Requirements of Modern Industrialization," by Simon Kuznets, Transactions of the Fifth World Congress of Sociology; Louvain, International Sociological Association, 1962, Volume II. Copyright 1962 by the International Sociological Association.

THE PHYSICAL PLANNING
OF INDUSTRIAL ESTATES

/Department of Economic and Social Affairs, United Nations, New York, N. Y., 1962, 54 pp., illustrated. (United Nations publication, Sales No.: 62.II.B.4, Price: US$0.75 or equivalent in other currencies./

As described in the Foreword of this study:

"The industrial estate is primarily a device for expanding, strengthening and locating small or medium-scale industries as part of a broad programme of industrialization, and as such has a unique role to play in economic and social development, particularly in the developing countries.

"The industrial estate is usually an organization set up to assemble, improve and subdivide tracts of land, and frequently to erect factory buildings, in advance of or following demand, which are either for sale or for lease to prospective occupants. The land is developed according to a comprehensive plan which makes detailed provision for streets, railroad tracks and utilities which are installed, as a rule, in advance of sale or tenancy, or otherwise ensured to the prospective occupants. The developing agency establishes control over the area and buildings by means of zoning and restrictive covenants with a view to protecting the investments of both developers and occupants. These industrial communities are thus differentiated from portions of a town reserved for industrial use by city zoning ordinances; from unimproved and unplanned tracts of land offered for sale as suitable for industry; or from sites improved for the use of an individual industrial establishment or of a very small number of industries.

"The various economic aspects which bear on the location of industry, such as markets, raw materials, controls and incentives, have been covered comprehensively in an

earlier UN study, The Establishment of Industrial Estates in Under-Developed Countries. (United Nations publication, Sales No.: 60.II.B.4, US$1.00.) The purpose of this new study is to offer guidance with regard to the physical planning principles which should be considered in establishing industrial estates.

"It is addressed primarily to the planner and administrator who is faced, perhaps for the first time, with the task of providing suitable accommodation for industry, and is designed to offer practical aid in the many physical planning problems related to this undertaking. It attempts, furthermore, to indicate to the sponsoring agency that such estates cannot be undertaken as isolated projects, but must rather be fitted into the framework of a country's policy with respect both to urbanization and to industrialization. Since the use of industrial estates as a means of initiating, accelerating and dispersing the industrial process in the developing countries is still in the early stages of research and application, the findings of this study are subject to re-evaluation as further experience is accumulated."

STANDARDS AND STANDARDIZATION AS PREREQUISITES FOR DEVELOPMENT

[Regardless of whether a developing country chooses to make its main effort in agriculture, in industry, or in some combination of the two, it is not likely to achieve large improvements in productivity unless it is prepared to adopt and enforce certain standards of weights and measures, of quality control, and of work performance, and to standardize the number, types and characteristics of the raw materials, parts and components, and finished goods it produces. In the absence of adequate standards and standardization, scarce resources of capital, materials and skilled labor are wasted; nationally produced goods of all kinds are at a competitive disadvantage not only in export markets but also in the home market; and the health and physical safety of the people may suffer. An effective standards and standardization program should, therefore, be an integral part of the national development effort.

The importance of this subject was recognized at the recent United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas. A number of papers were submitted by different countries, both developed and less developed, on their varying experiences in the field of standards and standardization. This section consists of abridgments of and excerpts from several of these papers, covering the major aspects of the subject and some specific country examples.]

THE ROLE OF SPECIFICATIONS AND STANDARDS IN THE INDUSTRIALISATION OF LESS DEVELOPED COUNTRIES

/From Report of The Conference Secretary-General: Specifications and Standards; United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas; (Agenda Item: D.3.3 - D.9.1 - J.2.2 E/Conf.39/GR 40 (D), Dec. 1962). Published in French, English, Russian, Spanish; United Nations, New York, N. Y./

This is a reprint of most of the Report.

Less developed countries wishing to industrialise their economies have the advantage over the developed countries in that they can learn from the latter's experience, both positive and negative. One of the basic aspects of scientific, technical and industrial culture is standardisation. The importance of standardisation has long been recognised by the industrialised countries, both on a national and on an international level. In these countries, a huge amount of scientific knowledge and industrial operating experience has been embodied in agreed and published standards. Altogether, there are published 60,000 to 70,000 national standards in the world. This accumulated experience is at the free disposal of countries wishing to plan their own industrial development with the least amount of wastage and with utmost expedition. Standardisation is an open and well traced road to industrial development.

The present moment, when many new countries are embarking on industrial development programmes, is particularly favourable for a major standardisation effort. In these countries, there is, at present, only a limited amount of established production procedures and connected vested interests, with the consequential inconvenience and resistance to making a change in existing procedures and patterns of industry. In industrially developed countries, industrialisation has often preceded standardisation. However, the experience of

these countries adequately shows the manifold difficulties there are in introducing standardisation in established enterprises. Since co-ordination is much easier to obtain at the initial stages of planning than at a more developed stage, it would, in less developed countries, be more beneficial to let standardisation precede industrialisation.

Definition of Standardisation

A definition of the term "standardisation" in its general usage has been given by the International Organisation for Standardisation (ISO). This is:

> "Standardisation is the formulation and application of rules for the purpose of establishing order in a particular field with the support and for the benefit of all the parties concerned, and more particularly with a view to obtaining the greatest possible overall economy, due regard being paid to operating and safety requirements.
>
> "It is based on reliable results achieved by science, technology and experiment. It establishes bases not only for the present but also for the future and must keep up with advances that are made.
>
> "Some of its applications are as follows:
>
> (i) Units of measurement.
>
> (ii) Technology and use of symbols.
>
> (iii) Products and methods (definition and selection of product characteristics, method of testing and measurement, specification of characteristics suitable for defining quality, quality control, interchangeability, etc.).
>
> (iv) Safety of persons and property."

Aims of Standardisation

The aims of standardisation are, in summary, to achieve overall economy, protection of consumers' interests, and safety and protection of health and life.

Overall economy comprises economy of all resources -- human effort, materials and machines, and power and energy. The attainment of overall economy is equivalent to creating maximum productivity for the country as a whole. The growth of industry is marked by a corresponding rise in

the interdependence of the different spheres of production on one another. Each provides raw materials, machinery, components or services to others, and each receives such facilities from a number of other industries. This interdependence extends across national boundaries and for certain industries, is world-wide.

This complex flow of products can only function if adequate understanding is established at the innumerable transition points where products pass from one hand to another. Standards establish such understanding by defining essential characteristics of the products, and this facilitates the flow of goods. They further achieve economy of productive effort by reducing unnecessary variety, and ensuring interchangeability -- thereby making cheap mass production possible. Standards also make it possible to eliminate avoidable wastage during handling of materials, processing, transport, and in the exchange of goods and services. Thus, standards are a necessary prerequisite for the most economic uses of a country's resources. Only through the effective introduction of standards is it possible to change a pre-industrial economy into a modern industrial economy.

Protection of consumers' interests is ensured through the adequate and constant quality of goods and services which have been standardised. The consumer can safely expect that the goods and services will fulfil certain definite requirements, and are interchangeable. This makes it possible to rely on ready availability of standard goods from stock.

The question of protection of health and safety is closely linked with standardisation. As a result of the standardisation of, and minimum requirements for, materials, machinery, equipment and processes, accidents can be limited to a very considerable extent. This is particularly important in less developed areas, where the familiarity with industrial processes and equipment and with their dangers may be limited. Examples of safety standards at present being studied by the International Organisation for Standardisation (ISO) are standards for boilers, lifting equipment, mining equipment, and equipment intended for the protection of the individual workman. Such standards are, where appropriate, being established in co-operation with the International Labour Organisation (ILO).

Fields of Standardisation

In almost all fields of economic, technical or cultural activity, standardisation has proved to be helpful and, indeed, necessary. The following fields may be cited as examples:

Agriculture. The export trade in agricultural commodites is facilitated when standard terminology, standard units of measure, and standard specifications are used.

Mineral resources. Standard practice in mining and treatment of ores, standard specifications of minerals used in industrial production, and subsequent control of industrial products lead to greater confidence on the part of the purchaser and are conducive to a sound reputation for the producer in national and international trade.

Industrial production. Employment of standard processes results in uniformity of the product and simplification of industrial procedures. It helps to keep prices at an economic level and leads to the development of quality products. It is not necessary that the application of standards should be limited to big undertakings. A small manufacturer with a limited range of products, even a cottage industry, will benefit considerably by the use of standardisation.

Transport and communications. Standardisation in the field of transport leads to many advantages. For example, railway wagons manufactured according to the relevant standards can move from one country to another without the necessity of trans-shipment at the border. In the management of a service like the handling of mail and telegrams, the establishment of standards for the size of the letters, the weight of paper used for envelopes and postcards, etc., all lead to many advantages in the mechanized processing of mails and economy in operating costs.

Health protection. Introduction of standard safety precautions in mining, industrial production and matters concerning public health results in minimizing industrial accidents and maintaining public health. These standards are of great importance in the field of nuclear research and development.

Levels of Standards

The level of standardisation defines the groups of persons for whose use the standards are prepared. The more important levels are the following:

(a) Company standards, prepared for the use of the various departments of a company or production unit for guidance in its purchase, manufacture, sales, and other operations;

(b) Association or trade standards, prepared for the use of a group of related interests in a given industry or within a given profession;

(c) National standards, prepared for the use of all nationals of a given country;

(d) Regional standards, adopted for the use of a given regional group of countries with common economic and cultural interests;

(e) International standards, widely adopted by independent countries having common interests, particularly in international trade.

Formulation and Implementation of Standards

Standards are developed not in the interest of a single sector of the economy, but in the interest of all sectors of the economy in their capacity as producers or consumers of the goods or services concerned. Consequently, it has become an almost universal procedure to formulate standards through intensive consultation among all the interests involved. The extent and details of such consultation vary from country to country, depending on the economic and political structure of the country concerned. Nevertheless, the fact remains that rarely are standards laid down arbitrarily by a superior authority without consideration of the views of those who would have to implement or observe them.

The benefits of standardisation are only secured to the extent that standards are actually implemented where they apply. The implementation can be voluntary or compulsory and is, in most countries, a mixture of both. Whether the emphasis is on voluntary or compulsory application in a given country depends on the industrial traditions and political system of the country. In a country where the economy is completely controlled, standards are necessarily of an obligatory nature. In countries with a free economy, standards are, to a large extent, implemented voluntarily. The voluntary implementation of standards is based on the fact that standards have been established by common consent of all interested parties and satisfy an existing need.

There are, however, cases where the general public interest in overall economy and protection of health and safety is not immediately in accordance with the interest of individual firms, or where the economy of one particular user may conflict with that of another. For instance, implementation of standards may sometimes involve a change in existing production equipment or procedure. In such cases, for instance, where public health or safety is at stake, the observance of standards cannot be made voluntary.

Whether or not implementation of standards is voluntary, there is in the initial stages of a standardisation effort a great need for spreading the knowledge about and the significance of standardisation. For instance, in India, a major publicity campaign was launched with the aid of books, booklets, placards, films, etc., to spread the knowledge of new measures and the understanding of the importance of standardisation.

In countries where the implementation of standards is partly voluntary, the government departments, and their attached or associated organisations, can influence the implementation of standards considerably by placing orders only according to national standards. This power is particularly pronounced in less developed countries, where government or semi-governmental institutions are responsible for a very large part of procurement of manufactured goods.

Another effective means of implementing standards voluntarily is the application of certification marking for goods conforming to accepted standards. Certification is an independent guarantee to the purchaser, based on inspection and testing, that the product meets certain specified standards of quality, purity, etc. The national standards institution is often the best agency to operate certification marking schemes. Many national standards institutions have, in fact, extended their functions to this activity.

For the export trade of a less developed country, certification marking operated by the national standards institution, or other recognised institutions, could become even more valuable than in internal trade. Experience from the developed countries shows that, with a well-operated certification marking scheme, it becomes easier to convince foreign customers of the quality of the goods, thus greatly facilitating the marketing of the products.

National Standards Institutions

The importance of standardisation for economic development is so clear that it would be of interest to review briefly the organisation of national standards institutions. An institution is generally charged with the duty of developing suitable national standards for use within the country. The following functions may be entrusted to such an organisation:

(a) To study or to arrange for the study of standardisation in all fields of interest;

(b) To centralize and co-ordinate all standardisation work in the country;

(c) To disseminate the results of work amongst interested parties and promote the principles of standardisation and apply them in actual practice; and

(d) To co-operate with other organisations interested in standardisation in the country and to take part in the work of the International Organisation for Standardisation.

At the national level, the national standards institution or institutions of a country provide the forum for consultation among the national group interests. The normal procedure is to form expert committees, with representatives from producers, consumers and technologists, to prepare draft standards on the basis of common agreement. The draft standards are then widely circulated to every important national interest concerned with the subject of the draft. Comments are invited for further consideration by the expert committee, which takes final decisions and ensures that, in the final form, the standard represents the largest possible consensus of opinion within the country. This procedure tends, automatically, to ensure the widest possible acceptability.

This widely accepted procedure has implications for the organisation of the national standards institutions. They should be so organised as to facilitate the bringing together of the diverse interests, and constitute a forum for them. However, the actual organisation and status of national standards institutions vary from country to country, in accordance with the organisational and political patterns of the countries. The status varies from purely official to purely non-official.

In all countries, it is recognised that the support of the government is useful for the standardisation institutions, at least with regard to financial and administrative matters. In developing countries, it will be particularly difficult to introduce standardisation effectively if the government does not recognise its importance and support it effectively. A pattern which is widely followed is for the national standards institution to be officially sponsored and supported, but for its administration to be left to a council of nominees representing government, industry, trade, commerce and other interests vitally concerned with standardisation.

A national standards institution needs a technical staff, a library and, in most cases, also laboratory facilities. The extent of these facilities depends on the particular circumstances of the country, its needs, and its resources in terms of trained manpower and money. The limited resources in trained manpower may limit the activities of the national standards body, but a certain minimum activity in this field is of such basic importance that allocation of even scarce qualified technical skill to this activity will be among the first priorities.

Also, the need for laboratory facilities has relatively high priority. It will provide the necessary means for an independent and impartial testing, maintenance, verification and improvement of the secondary standards of physical quantities required in commerce, engineering, agriculture, medicine, etc. It also provides the scientific backing for the national authority responsible for laying down these standards. The laboratory can, where the need exists and resources are available,

develop into a national research centre in those applications of science to industry which cannot be handled on a private basis. The need for this type of laboratory is recognised in many countries.

International Co-operation

The developing countries have the advantage that they do not need to start from scratch in the field of standardisation, but can rely on the valuable and comprehensive experience of the developed countries, which is generally available. The best way of access to this information is through the international organisations working in this field.

The principal international agency of standardisation is the International Organisation for Standardisation (ISO), which is a non-governmental international organisation with headquarters in Geneva. Membership is open to all national standards institutions. ISO has at present members from 46 countries -- mostly developed countries, but some standards institutions in the less developed countries are also members. /Information regarding the ISO may be obtained from the General Secretariat, International Organisation for Standardisation, 1, Rue de Varembé, Geneva, Switzerland./

The objective of ISO is to promote the development of standards in the world with a view to facilitating international exchange of goods and services and to developing mutual co-operation in the sphere of intellectual, scientific, technological and economic activity. As means to this end, it may:

(a) Take action to facilitate co-ordination and unification of national standards and issue necessary recommendations to member bodies for this purpose;

(b) Set up international standards provided, in each case, no member body dissents;

(c) Encourage and facilitate, as occasion demands, the development of new standards having common requirements for use in the national or international sphere;

(d) Arrange for exchange of information regarding work of its member bodies and of its technical committees;

(e) Co-operate with other international organisations interested in related matters, particularly by undertaking at their request studies relating to standardisation projects.

ISO's work is conducted through technical committees of which there are nearly 200. They are composed of delegations from member

institutions wishing to take part in it. In questions of electrical technology, the International Electrotechnical Commission (IEC), though organisationally distinct, functions as an electrical division of ISO.

The most significant aspect of ISO's activities is that it works out international recommendations with a view to getting them adopted as national standards, and thereby incorporated in the national economy. The organisation has at present worked out about 250 international recommendations, and some 500 new projects for recommendations are under preparation. The published standards are made available for sale through the member bodies.

With regard to the fundamental question of weights and measures, two international organisations are at work. These are Bureau International des Poids et Mesures [International Bureau of Weights and Measures, address of which is Pavillon de Breteuil, Sèvres (Seine-et-Oise), France] and Organisation Internationale de Métrologie Légale [International Organisation of Legal Metrology, with headquarters at 9, Avenue Franco-Russe, Paris VII^{e}, France]. Both are governmental organisations.

There is also regional co-operation in the standardisation field. In this connection, the standardisation meetings in the Middle East can be mentioned. They took place in Beyrouth in 1958 and in Cairo in 1961. Likewise, a standardisation meeting for Latin America took place in Buenos Aires in 1960, and the Pan American Committee for Standardisation has received great interest. The European Coal and Steel Community has also developed common standards.

A special aspect of international co-operation is the assistance of experts and training courses in standardisation matters which have been arranged on an international basis. The U.N. has on several occasions provided standardisation experts to developing countries, for instance to Iran, Lebanon and Turkey. Exchange of personnel is in several cases arranged among national standardisation institutes.

Action by Less Developed Countries

All papers submitted [to the UN Science Conference] on the subject of standardisation agree on the importance of furthering national standardisation efforts and promoting international co-operation. This agreement is independent of the degree of development, or of the political structure of the authors' home countries. The strongest appeal for action in this field comes from countries which are beginning to industrialise.

The very nature of industrial planning requires the existence of some standards. The problem is to decide which standards should be used,

and how they should fit with other standards, national or international. It is at this stage that developing countries with limited funds are able to make use of standardisation to lay the foundation for a speedy industrial development. A vast store of knowledge and operational experience has been embodied in the recommendations from the international organisations working in this field, and can be utilised freely. However, the creation and continued support of a national standards institution are an essential prerequisite for the effective utilisation of this knowledge and its injection into all the branches of the national economy where it is required and will facilitate fruitful participation in international work.

THE USE OF STANDARDS IN IMPROVING ENGINEERING EFFICIENCY IN DEVELOPING COUNTRIES

G. Weston

[From "Standards and Engineering Efficiency," a paper prepared for the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas; (Agenda Item D.3.3-E/Conf. 39/D/102, Oct. 1962), United Nations, New York, N. Y.]

These are excerpts from the paper.

Engineering tends often to be looked at very narrowly as the part of industry that makes or uses factory plant and equipment such as machine tools, boilers, turbines, electric motors, cranes, steel sections and the like. But, in fact, some aspect of engineering enters into every activity of industrial and commercial life and increasingly into agriculture and the exploitation of natural raw materials. Engineering efficiency in its widest sense is of vital importance to the development of any country even though that country may have little interest in producing any elaborate or complicated items of engineering equipment. But it will certainly need much engineering equipment for the economic functioning of its local industries, for production of building materials and the construction of factories. It must also develop its transport, its roads, its communications and its power supplies, exploit its minerals or timber, and ensure the quality of its exports to pay for the capital equipment it imports. All this means engineering, and to operate efficiently in this field, as well as to profit from the engineering experience of others, demands standards.

G. Weston is Associate Director of the British Standards Institution.

The value of standards as one of the indispensable tools in engineering is generally accepted as self-evident, but it is necessary to emphasize that as for any other tools, their nature and use have to be studied and learned. Standards are often complex documents both to prepare and to use. They may classify materials; define a range of qualities or grades; lay down how to test them and assess the results; or specify the dimensions, performance and ratings of components and machines, and the maintenance and operation of equipment. Their value depends largely on their wide acceptance and, whilst themselves a disciplining factor, their use requires industrial -- indeed national -- discipline.

The wide scope of activities in the economy of any country into which engineering enters underlines the importance of the adoption of common engineering standards and practices as a national policy. Government departments placing orders abroad and at home for materials and equipment, individual firms or public authorities manufacturing and providing services, will benefit from standards in their own sphere, but common standards will bring the still wider benefits of interchangeability, a common technical shorthand and an integrated industrial economy ensuring effective use of national resources of raw materials.

The setting of standards for the products of any country -- whether they be processed or natural products -- is of great importance in providing targets as a means of encouraging the general improvement of the quality marketed. Indeed, some countries are adopting the policy of fixing higher standards for their exports than for home production and are taking steps to ensure that the products exported do in fact comply with such higher standards.

The use of engineering standards as a means to simplification and good order is of major importance to countries whose trained personnel is severely limited in relation to the immense tasks to be tackled when a high proportion of income is being devoted to capital development. The more tasks that can be reduced to routine through reference to accepted specifications, the more time is available for special design and operational problems. Standard equipment means less supervision, less improvisation, less trouble with ordering, replacement and servicing, and a wider field for competitive purchase, as supply is not limited to a single firm. From the financial point of view, the standard product should be cheaper to produce and to purchase, and the capital cost of holding stocks can be reduced. Haphazard development of costly installations and the consequent expense of maintenance, modification and the problems of expanding the installations will be avoided. An important financial saving accrues from the proper use of materials -- indigenous or imported -- based on standards which can provide exact guidance on the types and grades to be used for different purposes, so that equipment and products are neither over- nor under-engineered.

The fundamental engineering standards are not only means of simplifying and unifying practice but, as already developed nationally and internationally, provide invaluable textbooks to guide production and engineering services. They illustrate the range of subject matter which can be covered by standards. First, there are the standard terms and definitions, symbols and conventions for drawing practice, limits and fits: all these, when adopted within a manufacturing or operating unit, and in a country's engineering as a whole, will immensely simplify the understanding of technical specifications on the factory floor, in the setting up of a plant, in tendering to meet contracts, and in the interchange of technical information in purchasing. At the international level -- and there is already fairly wide agreement on the details of drawing practice and on the definition of limits and fits -- the exchange of technicians, the work of consulting engineers, and the supply of plant from different overseas sources will be simplified if a common engineering language is used.

Standard methods of test for basic engineering materials -- steel, and non-ferrous metals -- are the next requirements, to secure consistent quality and suitability for the purpose to which the materials are to be put. Such standards may also have to deal with sampling procedures and to specify test apparatus. Specifications setting the appropriate limits of performance, in relation to such tests for particular end-uses, complete the data required on materials. Here, again, international agreement is already considerable.

Components in wide general use -- fasteners, shafts, jigs, related spanners and tools -- all demand common national standards if waste and dislocation are to be avoided. In the case of fasteners, the international picture is of two basic screw thread systems -- the ISO (Unified) inch thread, and the ISO metric thread, for which standards are now in process of preparation. The difficulties arising from these two systems can be exaggerated, since both have the same thread profile and, moreover, the nut and bolt in machinery are supplied as a single item. Nonetheless, in any country, the eventual aim should be to work on a single system. As things stand, however, with the vast use of both inch and metric threads throughout the world, it would be unwise to adopt so rigid a national policy as to cut off supplies from sources using either the one system or the other.

Standards for essential dimensions (for functional interchangeability) and performance of more complex, but widely used, engineering equipment (whether produced locally or imported) -- electric motors and cables, machine tools, etc. -- form another group of basic standards. Here the choice of types, ranges of sizes, ratings, etc., is important, and the greater the simplification the better, provided there is a reasonable choice within the national standard and the designer is not forced to introduce haphazard variations. Excessive restriction of

types may also reduce the element of competition in design and prevent development. It is clear, however, that subject to this exception, a minimum of types and sizes leads to longer manufacturing runs, with consequent economies, better control of quality, less wastage of material, savings in packaging, warehousing, stockkeeping and administrative procedures.

The final group of standards affecting the general running of engineering industry is that of codes of practice. The benefit from standards which provide for equipment of good quality can be entirely defeated if it is treated in the wrong way. This can be avoided by working to Codes of Practice which lay down standard procedures to be adopted -- for example, in the installation and maintenance of machinery, such as transformers and rectifiers, in the operation of boilers, for identification of pipelines in the factory, in packaging methods, and in materials handling.

A major factor in the efficient running of engineering industry is the confidence of the worker in the safety measures adopted and the steps taken to avoid accidents, as this has a significant effect on his individual output. This confidence will be secured not only by the application of appropriate standards of quality, reliability and safety, to the equipment, machines and tools used, such as lifting gear, chains, hooks and slings and hammers or other hand tools; but also by specific standards for safety equipment worn and used by personnel and by safety codes and symbols. Examples are standards for industrial helmets, protective goggles for welding, gloves for electricians, safety boots, together with standard symbols and colours to indicate danger of various kinds.

National standards, then, should be the source of information and guidance on materials and equipment, procedures and practices of the many kinds described, for the individual engineering firm or contractor. These standards must necessarily specify a wider range than any particular manufacturing or operating unit requires, and intelligence and careful selection is necessary for the particular jobs to be done. Selection from a common basis will, however, ensure the advantage of interchangeability between the products of one firm and another and understanding between the firm and its suppliers and customers.

This "intelligent" selection from national standards and their application to the requirements of any particular firm or organisation is an important task. It is increasingly recognized in engineering industry, therefore, that whatever the size of unit there must be a department or individual responsible for settling the firm's standards, based on the national standards. This department or individual should work in close consultation with the departments responsible for design, production, purchase of materials and stores, selling, and general

administration. The "Standards Engineer" is becoming an accepted category in the engineering world and, within the general lines of policy on what is to be produced or the services to be provided, he will keep a watch on the range of standard products, the cataloguing of parts designed or "bought in," the changes in national standards affecting the company standards which have been laid down, and will scrutinize demands for variations from designers and others. Without the rigorous discipline of a standards department or standards engineer, there is always a tendency for unnecessary diversity to creep in, for components used by different branches of a concern to be separately specified and ordered, perhaps under different names, and for parallel stocks to be built up, with all the waste of administrative effort, in purchasing, recording and store-keeping.

The adoption and application of standards in engineering has so far been considered in its more general aspects, and while emphasis has been laid on the need to master the use of these tools for greater efficiency, the crucial problem of ensuring compliance with specifications on the production floor remains to be considered. A standard sets the precise level of quality reliability, or accuracy, or dimensioning of the product, and must do so in such a way that everyone concerned with its achievement can be in no doubt regarding the level which must be reached. The objective of the producing firm must be to achieve the requisite quality at minimum cost and to be able to demonstrate to its customers that the quality is consistently achieved. (To play safe by exceeding the quality laid down makes sense neither economically nor technically: too high a quality will not only be expensive but may cause difficulties to the customer because the material will damage or wear out his tools.) A standard which not only specifies the quality but also the methods of testing to be employed, the sampling rates and inspection procedures will help the firm to secure these objectives. Standards of this kind, based on sound statistical techniques, are increasingly being developed, particularly as automatic methods of manufacture are adopted.

Such standards will indicate the limiting values -- e.g. of tensile strength, or of sulphur content of steel, etc. -- and also the average values, which it is important for the user to know. They will recognize the inevitability in economic quantity production of a percentage of defectives -- if, for example, a product of tensile strength not less than a standard specified value is being produced consistently and without fail, it is almost certain that the target value in the production process has been set at too high a level or alternatively that the limiting value has been specified at too low a level. The permitted percentage of defectives will vary according to the use for which the material is designed but, with manufacturer and customer in agreement both on the standard of quality and the quality control procedures to be followed, disputes will be avoided. When, of course, 100 per cent compliance with

specified quality is demanded for items crucial to safety, standard methods of sampling must be replaced by 100 per cent inspection and testing. However, in large areas of engineering, sampling methods, allied with inspection at crucial stages in manufacture, will be sufficient. Quality control, based on sound standards, will not only help in satisfying the customer, but will also provide the manufacturer with a valuable aid in increasing the efficiency of his production processes.

What has been said so far relates to standardisation in the national sphere, though some reference has been made to the international recommendations which have been issued -- and this work is going on all the time -- on engineering standards. Differing national standards can be a most serious barrier to international trade. International co-operation in the alignment of standards, has the possibility of yielding great returns. It is as essential to the developing countries as the other forms of international co-operation for spreading technical knowledge, providing skilled technicians, and providing financial resources and capital equipment. Any country that is developing its economy cannot fail to benefit by co-operation in the work of the international standards organisations and by adopting the internationally agreed recommendations. Valuable as are the experience and research that go into the preparation of national standards, the collective knowledge that is available in international standards and the wide agreement on practice and techniques that they represent make them indispensable as guides to national standards policy.

THE INDIAN STANDARDS INSTITUTION AND SOME OF ITS WORK

Lal C. Verman

[From "Standardization: A Pre-requisite for Development," a paper prepared for the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas; (Agenda Item: D.3.3-E/Conf. 39/D/20, Sept. 1962), United Nations, New York, N. Y.]

These are excerpts from the paper.

The Indian Standards Institution (ISI) was brought into being in 1947, the year of India's independence. By the time the national planning effort was initiated in 1951, ISI had already done most of the spade work required for laying a sound foundation for a strong organization. As the country went from plan to plan and the industrial activity acquired momentum, demand for ISI standards and other services outpaced its manpower and physical resources. The position today is that ISI, with over 2,000 published standards, is in a position not only to guide the existing industries in their effort to establish company standards, rationalize their productive effort, and institute quality control measures, but it is also consulted in the planning of future industries and in organizing the export promotion effort.

The purpose of this organized standardization activity is not only to formulate the requisite standards, but also to keep them abreast of scientific discovery and technological advancement. Research in science and

Lal C. Verman is Director of the Indian Standards Institution and Honorary Adviser to the Government of India on Standardization.

technology, therefore, plays an important role in standardization. The objective of such research is to make improvements over existing methods and means of production by devising more economic and functionally more useful designs, by discovering safer and more reliable materials, processes, methods, techniques of control, and the like. The objective of standardization is to make these results of research readily applicable in day-to-day industrial practice. The fruits of research, therefore, furnish the basis on which standards are founded and, when further advancements are made, the new knowledge helps improve existing standards through revisions and amendments. Standards thus move with scientific and technological development and enable industries to grow and improve as know-how expands.

Certification Marking and Quality Control

An effective means of implementing ISI standards has been to provide certification marking facilities for goods conforming to accepted standards.

A certification mark is a third-party guarantee to the purchaser that the goods have been inspected, tested and certified by or under the supervision of a competent agency and hence may be purchased with a reasonable assurance of quality. The primary purpose that certification marking serves is to convey this assurance when the purchaser has no readily available facility for inspection and testing or when such testing is clearly uneconomical, such as for a small volume of goods.

The principles on which certification marking schemes are formulated are twofold. Firstly, the organization operating the scheme must be an independent and technically competent body with no business interest connected with production, distribution or supply of goods. Secondly, the operating organization must be satisfied that the manufacturing equipment, system of inspection and method of quality control, available in the factory where the goods to be certified are manufactured, are adequate to ensure conformity with the accepted standards. In addition to this in-production control, an independent vigilance and a continuous check on quality is maintained by drawing samples from the production line and from stocks and from the open market, tests being conducted either by the operating organization itself or at its instance by independent laboratories.

In India, special legislation exists -- The Indian Standards Institution (Certification Marks) Act, 1952 -- which empowers the ISI to

(a) establish and publish, in such manner as may be prescribed, the Indian Standard in relation to any article or process;

(b) specify a Standard Mark, to be called the Indian Standards Institution Certification Mark, which shall be of such design and contain such particulars as may be prescribed to represent a particular Indian Standard;

(c) grant, renew, suspend or cancel, in such manner as may be prescribed, a licence for the use of the Standard Mark;

(d) levy such fees for the grant or renewal of any licence as may be prescribed;

(e) make such inspection and take such samples of any material or substance as may be necessary to see whether any article or process in relation to which the Standard Mark has been used conforms to the Indian Standard, or whether the Standard Mark has been improperly used in relation to any article or process with or without licence.

Under this legislation, ISI has currently some 400 licences in operation in some 250 production units. They relate to about 125 Indian standards covering as many products, and the total annual production under these licences is estimated to reach in the near future the equivalent of some $475 million. Under another Indian law, agricultural products are graded and certified, which includes a good many export commodities. Under this system, a total annual production amounting to some $150 million is covered. Though all this represents a fraction of national production today (say, about 2 percent), yet a good beginning may be said to have been made for a newly developing country.

Certification marking has obvious advantages both to the producer and to the consumer. A small consumer, even though willing to pay a little extra for quality, can never be certain of the quality he buys, since more often than not he has neither the means nor the requisite experience and knowledge for checking the quality. Certification marking simplifies his problem. It is also welcome to industrial and organized purchasers as a guarantee of quality and performance. For the producer, the mark, on the one hand, affords protection against unfair competition with cheap and non-standard goods and, on the other, brings him the assistance of a competent agency which evaluates and maintains the standard of his production.

It is desirable that the government of a country lend its support to encourage certification marking by the national standards body. If government as the biggest organized consumer agrees to give certified goods some preference -- either in price or otherwise -- in all official purchases, it would go a long way in establishing certification marking in industry and trade.

For the export trade of a less developed country, certification marking operated by the national standards body could become even more valuable than in the internal trade. With certified goods, it would be easier to convince overseas customers of the quality of supplies, making pre-shipment, post-landing inspection superfluous and unnecessary. The legal provision of penalty against the misuse of certification marks is an additional guarantee for consumers in the home market and abroad. Apart from the penalties, suppliers are also under obligation to replace, free of cost, any defective supplies bearing a certification mark.

Standards and Economical Use of Materials

The steel economy project of the ISI may be cited as an example of how standards result in more economical use of materials.

The aim of this project is to achieve economy in the use of steel in structures through the adoption of standards all along the line from the stage of production, through design, fabrication and erection, to use and maintenance. In production, considerable emphasis is given to the rationalization of shapes and sizes of sections, whose designs had been frozen years ago. New standard sections now developed by ISI save about 10 percent of steel and all the new mills installed during recent years in India, or to be installed in future, are to produce these new sections. The use of cold-formed sections made from strip is also being standardized, which could save up to 40 percent of the steel material. Standards for welding equipment and accessories and codes for welding practices have been developed to economize further on steel by eliminating rivetting. Similarly, the new and improved design codes for steel structures now enable Indian engineers to use more rational factors of safety and loading criteria and also permit the use of more economical and up-to-date formulae for designs.

On a conservative estimate, about 20 percent of steel may be saved, if all these measures now available to the engineer are fully implemented. In the context of 10 million tons of production of steel, an appreciable quantity of which is used for structural purposes, a saving of even 1 million tons per year would amount to the equivalent of well over $100 million. Compared to this, the cost of the steel standardization project is a mere flea-bite.

A part of the steel economy project was concerned with rationalization of the varieties of alloy and special steels required for miscellaneous industrial uses. Indian industries, like those of most other newly developing countries, import equipment and know-how from all parts of the world, which has resulted in the demand for well over one thousand types of special and alloy steels, including tool steels, based on a

variety of overseas specifications of various industrial groups in different countries. The position is not only wasteful, but it also precludes the possibility of indigenous production as the demand for each type of steel is necessarily very limited. After an extensive study, it has been possible to reduce drastically the varieties of alloy and special steels to some 130 varieties and also to minimize the use of imported alloying elements, such as nickel and molybdenum, and to maximize the use of indigenously available alloying elements such as manganese and chromium. As a result of this project, it has now been possible to proceed with the schemes for setting up several new alloy steel plants, a number of which are currently under construction.

INTRODUCTION OF STANDARDS, NORMS AND TERMINOLOGY IN THE UNITED ARAB REPUBLIC

M. M. Salama

[From "The Introduction of Standards, Norms and Terminology," a paper prepared for the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas; (Agenda Item: J.2.2. - E/Conf. 39/J/18, Oct. 1962), United Nations, New York, N.Y.]

These are excerpts from the paper.

When the UAR adopted planning as a short cut to achieve economic development, special emphasis was given to scientific techniques of development which lead to the optimal utilization of national resources for the acceleration of industrial development. Accordingly, the country gradually began to switch over from an agricultural to an industrial economy. In doing so, it realized the importance of standardization for industrial expansion, and the production of goods and services of high quality at reasonable costs. In fact, this realization was induced by the successful experience of the more developed countries, which proved the importance and utility of standardization, not only in economic use of materials and human efforts, but also in regulating the flow of trade, reducing production and distribution costs, and ensuring basic qualities of goods.

In 1957 the Egyptian Organization for Standardization (EOS) was established to be the only official competent national authority in all matters concerning standardization. This marked a turning point in the development of standardization in the UAR.

M. M. Salama is with the Ministry of Industry of the United Arab Republic.

To fulfil the objectives of the introduction of standardization in the UAR, the following functions were designated to EOS:

(a) Elaborating standard specifications for materials and products of all local industries.

(b) Securing reference standards for calibration and verification of measures and measuring instruments.

(c) Ensuring the existence of standard systems for technical classifications, definitions, terminology, and symbols.

(d) Providing the necessary measures for quality control of raw materials and products in conformity with the standard specifications, and establishing central and regional laboratories for metrology and quality control.

(e) Coordinating the standardization work in the Republic in accordance with other international standardization work.

In carrying out these functions, it was deemed necessary to organize the work of EOS in parallel to the economic development plan of the country. Accordingly, a priorities plan for standardization was drawn comprising all sectors of industry and technology, and covering the following:

(a) Newly produced articles.
(b) Export articles and materials.
(c) Requirements of governmental concerns and armed forces.
(d) Consumer goods.
(e) Methods of inspection, testing, and calibration.
(f) Scientific and technological terminology, symbols, drawings, and classifications.

The first five-year standardization plan went into force in July 1960. During the first year 1960/61, 76 technical committees were formed and more than 940 meetings were held. These committees comprised about 470 scientists and representatives of producers, consumers and trade unions. In the second year, 1961/62, the number of committees was raised to 98, members to 580, and meetings to 1840. In this manner, it was possible to draft and elaborate more than 400 standards covering about 3000 products, articles and methods of testing and calibration.

It was also found necessary to introduce a certification and conformity marking system to guarantee the high quality and safety requirements of goods and also to check the accuracy of measuring instruments used in science and industry. This system has been carried out gradually; it now covers locally produced gauges, verniers, micrometers and domestic appliances working with liquefied gases or kerosene. It is hoped that this system will cover most of the local products during the next few years.

It was necessary to overcome the lack of specialized laboratories for testing and calibration by the elaboration of a nation-wide project based on a three-level structure. The basic institutes of this structure are the National Physical Laboratory for Metrology (level A), the Central Laboratory for Metrology and Material Testing (level B) and 10 district calibration and testing laboratories (level C). The project was included in the five year plan of the country and a sum of about $6.4 million was allocated for its execution beside the technical and financial aid offered by the U.N. Special Fund and the Government of the Federal Republic of Germany. It is hoped that all the laboratories included in this project will be operating by the end of 1964.

The UAR has shown a keen interest to participate in international and regional activities, so as to draw from the experience of the more developed countries and at the same time to contribute to international cooperation for the progress of industry and technology. Thus, before the end of 1957, the EOS joined the International Organization for Standardization (ISO), and is now a member of 51 of its technical committees. This step was followed in 1961 by joining the International Organization for Legal Metrology, and it is now participating in the activities of 9 of its working groups. Lastly, in May 1962, a Presidential Decree was issued for the adhesion of the UAR to the Meter Convention signed in Paris in 1875.

Concerning regional standardization activities, the UAR organized the second session of the Middle East Standardization Conference which was held in Cairo, during January 1961, and was also attended by some experts from many developed countries. The deliberations and recommendations raised in this Conference have proved the importance of strengthening regional cooperation in this major field. The UAR is a member of the Permanent Technical Committee for Standards, formed by the Arab League, and is actively participating in its activities so as to ensure a mutual fruitful cooperation between the Arab States which it is hoped will hasten their economic development and progress.

The experience gained in the UAR during the past few years has indicated that the adoption of standardization in a developing country is by no means an easy task. However, by the adoption of standardization, the developing countries benefit from all the well-known advantages of standardization such as the complete consideration of local conditions; the efficient utilization of national resources; the foundation of national industry on a sound basis; gaining the confidence of the public in national production; improving production in quantity, quality and cost; increasing exported goods; improving material and moral conditions; increasing national revenue; and raising the standard of living.

THE JOURNAL OF ECONOMIC ABSTRACTS

This new quarterly journal began publication in January 1963. Each issue contains English-language abstracts of articles in 32 leading economic journals published in 16 countries and 8 languages. Each abstract describes the analytical methods used and conclusions reached in the original article. The abstracts are prepared by the article's author or the editor of the publication in which the article originally appeared.

The purpose of the Journal of Economic Abstracts is to help economists around the world stay abreast of current periodical literature and be familiar with the research work of others.

The Journal is published under the auspices of the American Economic Association as a cooperative enterprise of the contributing journals, most of which are published in North America and Western Europe.

One year's subscription plus a free introductory copy may be obtained by sending $2.00 to:

The Journal of Economic Abstracts
Littauer Center
Harvard University
Cambridge, Massachusetts, USA

A limited supply of sample copies of the first issue (Volume I, Number 1, January 1963) is available free to those who wish to examine the Journal before subscribing to it. Requests should be addressed as above.

[Two sample abstracts from the first issue are reprinted on the next page.]

"Equity and Efficiency: The Problem of Optimal Investment in a Framework of Underdevelopment," by T. Balogh; Oxford Economic Papers, Volume 14, Number 1, February 1962, pp. 25-36.

Optimal investment policy in a framework of underdevelopment (i.e. in an economy with substantial unemployment and underemployment) must be determined by this dominant feature of the economy. So long as investment is insufficient to provide work at levels of remuneration at or above the average level, inequality is bound to increase as a result of the growth in absolute numbers of the primitive sector living at the edge of existence. Under these circumstances policies which reduce the volume or the effectiveness of investment, also threaten the achievement of a tolerable degree of equality. In these conditions it seems essential that (a) as large a share of the increase in national income should be devoted to investment as politically possible, (b) the utmost care should be taken that the increase in investment should yield maximum increases in income. Premature welfare measures aiming at "spreading" prosperity at the cost of contravening these principles will merely create new pockets of relative privilege.

The problem of less favoured regions should be tackled, and the political pressure eased, in the interim period by efforts to increase rural productivity through new types of agricultural education and public works, rather than by spreading industrial employment at the cost of impairing its efficiency. There is no conflict between efficiency and equality provided the maximum increase in real income is used to increase investment and speed development.

"Development Policies for Southern Italy," by Hollis B. Chenery; The Quarterly Journal of Economics, Volume LXXVI, Number 4, November 1962. [English]

The paper analyses two related questions: (1) the reasons for the slower rate of growth in Southern Italy than in the rest of the country; (2) alternative policies for accelerating the rate of growth in the South.

Southern Italy has benefitted from a large-scale development effort over the past ten years, but it has not expanded as rapidly as the rest of the country. A regional model is used to separate the causes of growth in each region into demand effects and supply effects. It is shown that changes in supply patterns have been insufficient to offset the slow growth for Southern agriculture and other products.

To close the gap in income levels between the South and the North, a combination of internal migration and change in the structure of the Southern economy will be needed. The inter-regional model is used to demonstrate several alternative combinations of policy that will produce the desired effect. The most important change from the past is a more rapid growth of industry, which will require some revision of present industrial policies.

UNITED STATES OF AMERICA